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Proceedings of the U.S. Nuclear Regulatory Commission

Meeting With States on the Low-Level Radioactive Waste Policy Amendments Act (LLRWPAA) of 1985

Held at
Holiday Inn
Bethesda, Maryland
June 24-25, 1986

ORIGINAL

Compiled by C. Maupin, K. Schneider

Sponsored by
Office of State Programs
U.S. Nuclear Regulatory Commission

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SUMMARY

The purpose of this meeting was to discuss with selected State officials NRC responsibilities under the Low-Level Radioactive Waste Policy Amendments Act, including the approach being taken and progress being made in fulfilling NRC responsibilities.

The NRC staff objective was to obtain State views on technical and institutional issues associated with NRC and State implementation of the Act and to determine any additional areas in which NRC can be of assistance in the development of disposal facilities. We believe this objective was accomplished.

A transcript of the meeting was made and it is being published as a NUREG report in order that the information presented and discussed at the meeting may be available to those individuals and groups that have responsibilities under the Low-Level Radioactive Waste Policy Amendments Act for developing disposal capacity and for regulating a low-level waste disposal site.

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ACKNOWLEDGEMENT

The Office of State Programs would like to thank all participants in the meeting for their excellent contributions. A special thanks is due the speakers for reviewing the transcript of their talks for clarity and accuracy.

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I. Opening Remarks

Mr. Nussbaumer:

If I could ask that you be seated we would like to start the meeting.

Good morning, ladies and gentlemen. My name is Donald Nussbaumer, and I am serving as Chairman of this meeting. We wish to welcome you to our meeting on the Low Level Radioactive Waste Policy Amendments Act of 1985. The purpose of this meeting is to discuss with selected State officials NRC responsibilities under the Act, including the approach being taken and progress being made in fulfilling NRC responsibilities.

The NRC staff wishes to obtain State views on technical and institutional issues associated with NRC and State implementation of the Act and to determine any additional areas in which NRC can be of assistance in the development of disposal facilities. Copies of the meeting agenda are in the packets for the State representatives and are available in the rear of the room for others in attendance.

Also, available in the rear of the room are copies of Federal Register notices concerning NRC's Technical Assistance Programs to the States and the Branch Position Statement on Licensing of Alternative Methods for Disposal of Low-Level Radioactive Waste.

This meeting is open to the public. A transcript of the Proceedings is being made and will be available in the NRC Public Document Room in late August or possibly earlier. I ask that you please give your name and affiliation when you speak and kindly use the microphones. Otherwise, your statements will not be picked up by the recorder.

Also, any written comments on matters taken up at this meeting will be placed in the Public Document Room. Following the discussions of the NRC and State representatives on Wednesday, at approximately 11:30 a.m., members of the public will have an opportunity to ask questions. I ask that there be no smoking in this room.

There is a slight change in the agenda this morning. The lunch break will be from 12 to 1:30, instead of 1 o'clock as indicated on the agenda. Most restaurants nearby are crowded at lunchtime, and the extra time is needed.

The staff of the Office of Nuclear Material Safety and Safeguards will be distributing a paper on which they would appreciate your views concerning characteristics of low-level waste disposal methods. This paper will be distributed to the attendees shortly, and we would appreciate it if you would fill it out and return it to the table in the back after lunch. This will help us prepare for tomorrow morning's panel discussion.

The American College of Nuclear Physicians has extended an invitation to the officials attending this meeting to visit their annual meeting and exhibits being held at the J.W. Marriott Hotel in the Washington Convention Center, June 23 to 25.

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Given the relationship of nuclear medicine to low-level waste disposal, they felt that the exhibits they had would be of particular interest.

To gain entrance, they ask that you report to the press desk at the Convention Center. A copy of their letter of invitation and their program are on the table at the rear of the room for those who may be interested.

At this time I would like to call upon Mr. G. Wayne Kerr, Director of the Office of State Programs.

Welcome and Introduction

G. Wayne Kerr:

I want to welcome you to the NRC's Meeting on the Implementation of the Low-Level Radioactive Waste Policy Amendments Act of 1985. We appreciate your interest and attendance and we hope to achieve a productive exchange between you and the NRC staff.

The passage of the Low-Level Radioactive Waste Policy Amendments Act of 1985, clarified a number of issues which had concerned the compacts and individual States. Among these was the clear assignment to the States of responsibility for Class A, B and C radioactive waste as defined by 10 CFR 61.55 as in effect on January 25, 1983 while assigning the Federal government the responsibility for greater than Class C wastes with a fixed definition. It also gave the States responsibility for low-level radioactive waste generated by the Federal government that is not generated or owned by the DOE, or is the result of the decommissioning of U.S. Navy submarines or the result of any research and development testing or production of any atomic weapon.

Although the concerns over State responsibility have been clarified by the Amendments Act, we felt that a meeting such as this on the portions of the Act which NRC is responsible for and early interaction with States and compacts will benefit us all. By design we have invited a mixture of people to represent both technical and institutional view points. The Conference of Radiation Control Program Directors' low-level radioactive waste committee is here representing States on technical issues. We have also invited a representative from each of the compacts and most unaffiliated States to discuss primarily institutional issues. We recognize that the two --- technical and institutional are not always easily separable and certainly each impacts the other.

We are all aware that the commercial low-level radioactive waste disposal sector of the nuclear industry has changed drastically since the 1960's. In 1979, the industry was reduced to using three commercial sites located in South Carolina, Nevada and Washington, with over eighty percent of the waste destined for Barnwell, South Carolina. A critical situation was developing due not to a lack of waste disposal capacity but an imbalance in the distribution of available capacity. Also, in 1979, we saw a number of incidents occur involving problems with low-level radioactive waste shipments, including a truck fire, faulty

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vehicles and packages and improper paperwork. Governors' Riley (South Carolina), Ray (Washington) and List (Nevada) used these problems as a catalyst to focus attention on the low-level waste situation and to force some Federal actions.

In December 1980, the Low-Level Radioactive Waste Policy Act of 1980 was passed. It received broad support from NRC, Governor's Riley and Ray, the National Governors' Association, the National Conference of State Legislatures and the State Planning Council. The Act clearly stated the Federal policy to be that each State is responsible for providing disposal capacity for most low-level waste generated within their States. States were encouraged to enter into regional compacts, and compacts consented to by the Congress could exclude out-of-region waste after January 1, 1986. This Act was short and simple with a lot of flexibility. Time has shown it was too short - and too simple.

During the five year period following the passage of the Low-Level Radioactive Waste Policy Act hopes for a solution to the low-level waste situation based on straight forward actions did not materialize. The political balance of the haves versus the have nots prevented any concrete solution. The lack of incentives for the States with teeth in them turned out to be a major defect of the 1980 Act. The actions or inactions following the 1980 act clearly illustrated the need for incentives to assure that commitments for State action are met in a timely manner with penalties for failure to meet them. Those regional compacts and States that do not meet the milestones as outlined in the 1985 Amendments Act will be severly penalized in the pocketbook.

The passage of the Low-Level Radioactive Waste Policy Amendments Act of 1985 is the result of direct congressional involvement, even though the Congress would have preferred that the States solve the problems among themselves. The result is a complex piece of legislation with lots of hoops to jump through. The Act is designed to assure that the currently operating disposal facilities will remain available until January 1, 1993, subject to specific volume limitations and other requirements and establishes a system of incentives and penalties to promote steady progress toward new facility development.

I think we all expect the end result of these actions will be a comprehensive and workable national program to address this issue, another likely result is a substantial increase in low-level waste disposal costs.

The focus of todays meeting is on those items in the Low-Level Radioactive Waste Policy Amendments Act which require implementation by NRC and our approach and progress to date. In addition, we hope to interact with you on technical and institutional issues associated with the Amendments Act implementation to determine how NRC can address outstanding issues and be of assistance to States and compacts who are the center of attention in the implementation of the Act.

Thank you very much.

Don?

II. Low-Level Waste Management: Issues and Perspectives

MR. NUSSBAUMER:

Thank you, Wayne.

Our next speaker this morning will be Mr. John Davis who is Director of the Office of Nuclear Material Safety and Safeguards, and as many of you may know, that office has broad responsibilities for all licensing by the Nuclear Regulatory Commission, except for reactors. This includes both high-level and low-level waste, safeguards, material licensing, fuel fabrication plants and other fuel cycle facilities.

John?

Mr. Davis:

Thank you, Don.

As Don said, I am John Davis, I am from Washington. I am from the Federal Government, and I am here to help you.

(Laughter.)

Seriously, this meeting has brought together people from Washington and from throughout the country, from the Federal Government and other government entities concerned with low-level waste activities, and hopefully, we are here to help each other because goodness knows, we need help. I am very pleased to be here with you this morning, and I want to say a few words about our meeting from, at least, my perspective on the roles of the Federal Government and the States in this very important national enterprise under the Low-Level Radioactive Waste Policy Amendments Act. This meeting is very important to us here at NRC, and we believe you will find it useful to you.

Wayne Kerr has made some comments already about the Amendments Act. You know the Act. The Amendments Act requires both NRC and the States to carry out their respective responsibilities under very tight schedules.

As we proceed with our efforts, we want to be certain that we work closely with each other, so that each of us can fulfill our considerable responsibilities on time. We see this Act as requiring very close cooperation, very closely coordinated efforts to make this Act a reality in fulfilling and solving this national problem.

The NRC does not want to produce regulatory guidance that the States cannot use nor that has to be extensively reworked once we have produced it. We want to know what your problems are early, so that we can move early to solve these problems if they are within our jurisdiction. We both cannot afford delays, and we at the NRC are charged by our health and safety responsibilities to do what we can within our statutory mandate and available resources to smooth this process so that the State programs can proceed and we can both bring this national program to conclusion on the timetable Congress requires.

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I want to underline here that the timetable in the Low-Level Waste Policy Amendments Act for State development of new disposal capacity is very tight. If you State is not in a regional disposal compact containing currently operating disposal sites, the Act's first milestone requires your State to enact legislation to join a compact or certify its intent to develop a disposal facility within its borders. If your State has not already done so, you are no doubt acutely aware that that milestone is one week away.

Even if you State is a so-called "non-sited State" that has already enacted compact legislation or plans to develop its own site, time is of the essence. By January 1, 1988, your State or the Compact your State has joined must develop a siting plan with detailed procedures and a schedule for establishing a disposal facility.

Among other things, the State or compact must by that time have delegated all the statutory authorities needed to implement the siting plan. For most States, there is only one legislative session left between now and 1988. If that session begins in January, as it does in most States, your State executive or compact commission has about six months to refine its siting plan sufficiently to identify and prepare legislative proposals for all the necessary additional authorities.

It is also important to keep in mind that non-sited States and compact regions will probably need to begin implementing their siting plans before 1988, in order to meet that critical 1990 milestone for submitting a complete license application. The January 1, 1990 milestone is critical because the Amendments Act allows currently operating disposal facilities to stop accepting wastes from generators in non-sited States after December 31, 1992, and we estimate that it will take three years for an applicant to received an NRC license and construct and begin operating a new low-level waste disposal facility.

Thus, if the licensing review cannot begin by January 1, 1990, a non-sited State or compact may have to assume additional responsibilities and possibly legal liabilities beginning in 1993.

Several things need to be completed before work can begin on a license application. Since the Amendments Act requires the application to be found complete by January 1, 1990, the application will have to be submitted sufficiently in advance to permit NRC or the agreement State agency to make that finding. This time will depend in part on site-specific conditions and on the degree of additional engineering in the design of the facility, but for planning purposes we believe that a complete review will take about three months. This brings us to the beginning of September, 1989. 10 CFR Part 61, (our basic regulation for low-level waste disposal, requires a year of environmental monitoring of the proposed site for the disposal facility. This brings us to the beginning of September 1988, as an estimated effective deadline for the selection of a site for licensing, a scant two years and two months from now.

You will note that up to this point I have talked as if an application can be prepared concurrently with the environmental monitoring.

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Actually, this monitoring will have to be completed and thoroughly analyzed in order to support the application properly. Thus, in order to have reasonable confidence that its license application can be accepted in time for the 1990 milestone, a non-sited State authority or compact commission may well have to choose a site by mid-1988, and this assumes that there will be no additional delays from lawsuits or other procedural or technical surprises.

It should be clear now that at least in our view, a State or compact will have to be well along in the implementation of a completed siting plan considerably before the January 1, 1988, milestone for the development of that plan. In States and compacts now lacking the necessary siting authorities, this makes the upcoming State legislative session that much more critical.

NRC is working to develop the guidance needed for States to meet the 1990 milestone. On March 14, we published in the Federal Register a draft branch technical position on the standard format and content of new disposal facility license applications. We expect to have a final guide available by the end of 1987.

The standard format and content guide will also cover disposal methods other than improved shallow land burial, which was the base disposal method for meeting our 10 CFR Part 61 licensing rule. We are also working to prepare ourselves and provide guidance to Agreement States for timely review of license applications.

By the end of 1988, we expect to have a standard review plan specifying the technical reviews required for processing an application. We also expect to have all the procedures and technical capability in place by then for timely NRC staff review of applications for alternate disposal methods.

In addition, as we have said in recent Federal Register notices (and these will be discussed later in this session) we are preparing to provide free licensing technical assistance on regulatory matters to compact commissions and State facility siting authorities who request it. We will, also, provide technical assistance to requesting agreement State agencies that will be responsible for regulating new facilities to help them prepare technically sound and timely licensing decisions.

These technical assistance efforts will be limited to areas of a regulatory nature. However, we cannot allow ourselves to become involved in the development of a specific facility design that we may someday have to regulate. Our assistance will also be limited according to our available future resources.

So, the message is that the deadlines are real; the time is short; and cooperation is essential. In light of the limited time and resources available to NRC and the States during these very critical upcoming years, let me say just a bit about our approach to alternative disposal methods. This is an area of strong State and public interest.

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As a regulatory baseline, let me emphasize that NRC continues to believe that a facility meeting our 10 CFR Part 61 requirements for improved shallow land burial will be sufficient to protect public health and safety from radiological risk. We also recognize, however, that many States and compacts may incorporate additional engineering into their disposal facility proposals in order to obtain local acceptance. Some additional engineering may also be needed to satisfy regulatory requirements for disposal of mixed waste, depending on the outcome of our ongoing discussions with EPA on how to resolve the differences in our respective rules and statutory mandates. As you know, mixed wastes, or low-level radioactive wastes that also contain hazardous wastes, are subject to the Resource Conservation Recovery Act of EPA, that is, RCRA.

Although we recognize a need for NRC guidance in the area of engineered alternative disposal methods, the tight deadlines in the Amendments Act and our limited resources make it essential for us to set priorities within the NRC for our guidance, development and pre-application assistance efforts. To assure ourselves that our assistance goes to those who are most serious about using it, for example, we will want to have an authoritative State or compact commitment to pursue development of a specific alternative disposal method. In our view, a State or compact that has taken such a step would rightly have a higher claim on our assistance than a State or compact still exploring its options. We also intend to give priority to developing licensing guidance or alternative methods incorporating standardized facility or component designs that have been found acceptable by a number of compact commissions and State facility development authorities. We think that standardization will assist both NRC and non-sited States and compacts in a number of ways.

First, it would permit a concentration of State and Federal resources on the one or two or small number of alternatives preferred by most interested States. This would be more likely to result in better analyses and earlier refinements in facility designs when adjustments are least costly in terms both of money and of program momentum.

Second, standardization would permit time savings through possible NRC pre-approval of facility or component designs. If a State or compact is committed to providing the additional conservatism of highly engineered disposal, it should be able to take advantage of the opportunity to shorten the licensing approval process by obtaining pre-application approval of well-analyzed and high-quality designs. This means. if you believe you have a facility or partial facility design which is appropriate for review, don't wait to complete a full application to get with us for our opinions. Get with us early.

Third, widespread State acceptance of one or two facility designs will permit resource savings by reducing State or compact staffing requirements. A State or regional facility development authority would not need the level of technical staffing or contractoral support required to justify a highly individualized design or approach. This, in turn, would reduce interstate and interregional competition for available engineering and geotechnical expertise.

There might be additional savings to State or regional development programs from a more unified State interest in a standardized disposal method: more of the developmental work might be done in the private sector. Firms interested in marketing a facility or a technique known to be of widespread State interest may be willing to do more of the design and development work on their own.

Finally, widespread State acceptance of a particular facility design would obviate the need for a State or compact to justify why its proposed alternative differs from those in other States or regions. This is not to suggest that such justification could not be made, but only that they might be avoidable with a standardized facility design widely considered to be appropriately conservative. To a State or compact authority under an already tight timetable for the submittal of a complete application, not having to make redundant comparative analyses of designs or disposal methods can make the difference between meeting the 1990 milestone or missing it.

We believe standardization on a single or a very few methods of disposal has distinct advantages.

Let me turn now to the specific products we in the NRC hope to see from this conference.
First, it would be most useful to obtain a representative view of State and compact officials concerning the most important attributes or characteristics you would like engineered disposal alternatives to provide, in addition to those which are already required by Part 61. For example, how important is it to you to have a facility that provides for early detection of releases, and how early would you want such detection? How important is the relative ease of remediation if you detect a potential problem in meeting Part 61 performance objectives? If corrective action can be readily accomplished without removing wastes, how important is retrievability? Are there any known trade-offs between providing these or other additional performance characteristics in meeting the performance objectives in Part 61? Would there need to be additional waste processing or more funding for post-closure maintenance or a longer period of institutional care? These are some of the issues I hope that we can examine in this meeting.

We also would like a representative State and compact view on the extent to which currently identified alternative disposal concepts provide the additional performance characteristics you desire, and when I speak of currently identified concepts, these are those which were identified in the NRC-sponsored studies by the Army Corps of Engineers: aboveground vaults, below-ground vaults, earth-mounded concrete bunkers, augered holes, and mined cavities.

By now you all should have received questionnaires on these issues (Appendix D), and I urge you to fill them out and return them to NRC staff by the close of our business today. Your responses will be tabulated tonight to help focus tomorrow's discussion on alternative disposal methods of most interest to you.

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This discussion will help us meet another of our objectives, to obtain a representative State and compact view on the feasibility of future cooperation among the States and other interested parties to arrive at a single standardized disposal alternative or at least a reduced number, a few alternatives identified as best suited to particular climatic or other environmental conditions.

In addition to our interest in alternative disposal technologies, we hope to obtain State and compact views on a wide range of issues to be addressed in the implementation of other NRC tasks under the Amendments Act. These include such things as emergency access to currently operating sites, NRC review of petitions to declare certain low-level wastes as below NRC regulatory concern, State certification to assume waste management responsibilities after 1992, (if the State or compact region in which the State is a member cannot submit a license application that can be found to be complete by the 1990 milestone) and NRC preparations for the timely processing of license applications.

Although the Amendments Act did not require us to address the question of mixed wastes, we also hope to get your views on how best to resolve this regulatory uncertainty. Mixed wastes and the other issues I have listed here will be discussed shortly in this morning's session.

Please actively participate. As you see, this meeting has a very ambitious agenda, but we felt we could not afford to lower our expectations. There is much work to be done in very little time. We need to be certain that NRC and the States understand each other's concerns as we move ahead together and cooperatively on our respective tasks. I appreciate your being here and look forward to a productive meeting and a continuing active interchange.

The Amendments Act is really a challenge to us in government. We see the issue of radioactive waste disposal as a particular challenge of the ability of government as an institution to achieve. It is a highly emotional issue. It is governed by detailed law. It must be solved, and is a very real challenge as to whether existing institutions can accomplish it. This requires early and continuing active cooperation. We in NRC need to know your plans. We need to know your needs, your reactions to our efforts as early as possible. Don't wait for gatherings such as these. Let us communicate and as we say down South, "Time's a wasting." So, let us get on with it.

Thank you.

Mr. Nussbaumer:

Thank you, John, for setting the stage so well for this meeting. Are there any questions for Mr. Davis?

If not, I would like to call on Robert Browning, Director of the Division of Waste Management in the Office of Nuclear Material Safety and Safeguards who will take up NRC roles in implementing the Low-Level Radioactive Waste Policy Amendments Act.

Bob?

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III. NRC Roles in Implementing the LLRWPAA

MR. BROWNING:

Thank you, Don.

The Low-Level Radioactive Waste Policy Amendments Act of 1985 affirms the intent of Congress that the States are to assume responsibility for low-level waste disposal. Congressional consent to seven interstate compacts has also affirmed a national policy of encouraging regional disposal solutions. In contrast to the original 1980 Policy Act, however, the Amendments lay out detailed requirements, incentives and penalties for the transition period until new disposal sites are established. The Amendments also assign the NRC a series of regulatory responsibilities. The Commission supported this legislation and believes it properly focuses on the timely establishment of new disposal sites.

We, in NRC, are firmly committed to our assigned national regulatory leadership role and intend to carry out our responsibilities within the time frames specified in the Act. We are also continuing an active regulatory outreach effort to assist States in meeting their responsibilities. A Federal Register notice identifying specific areas of NRC assistance was published this January following direct correspondence with appropriate officials in each of the States.

In my talk today, I would like to briefly outline specific NRC responsibilities under the Policy Amendments Act. I will, also, discuss several indirect impacts of the legislation on NRC programs, and finally, I would like to offer several thoughts on the challenge of meeting the siting milestones specified in the Act.

Many of the schedules I am about to discuss are more fully described in draft NUREG 1213 titled Plans and Schedules for NRC's Implementation of the Low-Level Waste Policy Amendments Act which is available here today. I encourage each of you to get a copy of that document and take a look at it because it is our attempt to lay out for all the actions that we have under the Act, significant milestones and dates so that you can best determine what you want to get involved in and when would be the most appropriate time in the development of our specific tasks.

I would also encourage you to comment actively on that document. For example, if you find that we are on a timetable and schedule that will not be consistent with your timetable needs, that would be of great importance to us to know.

Licensing guidance on alternatives to shallow land burial will continue to be an emphasis for our program. The Amendments Act requires that NRC identify alternative disposal methods and issue technical guidance by January 1987. NRC is further required by January 1987, to establish procedures and develop the technical capability to process license applications. By January 1988, NRC is to publish all technical

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information that must be provided to the NRC in a license application, together with available technical requirements for an alternative disposal method. These actions are being undertaken in active consultation with States and other interested parties, such as this particular session we are having today.

These provisions are consistent with the commitment the NRC has had for several years, namely, to develop guidance on alternatives and to gear up for expeditious review of applications for such alternatives. We have evaluated five alternative disposal concepts, as Mr. Davis mentioned, based on a report prepared for us by the Army Corps of Engineers.

The five volume Corps report covers the range of alternatives at the time we commissioned the study that we believed could foreseeably be considered. They include aboveground vaults, below-ground vaults, earth-mounded concrete bunkers, augered holes and deep mine cavities.

On March 6, 1986, the NRC staff published a Federal Register notice proposing guidance on general licensing questions an applicant would have to address to obtain a license using an alternative disposal method. The public comment period closed on May 5, and I would like to emphasize that although the public comment period is closed, in the event you don't meet those dates, we still would be interested in hearing from you even though it is beyond the public comment period.

Comments on the alternatives identified by the NRC staff were generally favorable. As you know, we will be discussing alternatives in greater length tomorrow. As interest among States, compacts and industry becomes focused on specific disposal concepts, designs and practices, we will develop more specific guidance. Toward fulfilling the Act's requirement to establish procedures to process license applications, the NRC published, on March 14, 1986, a Federal Register notice of availability and solicited comments on a draft branch technical position on the standard format and content of license applications for near-surface disposal of radioactive waste. In this case, the public comment period closed on May 13. No substantive comments were received.

This bothers me. It makes me wonder whether our method for making these guidance documents available to the States and interested parties is really working, and we would appreciate any comments you have later in the session as to whether we can improve our method of making known our draft positions which is our attempt to try to get public and State involvement in our thought process as early as possible. Perhaps the way we are doing it just isn't reaching the right audience if, in fact, we are not getting the kind of reaction back that we are really looking for.

Our internal licensing capability will be established through the development of a standard review plan, an environmental review plan and the acquisition of the skills, methodologies and codes necessary to implement those plans. The Policy Amendments Act requires that the NRC review and process license applications within 15 months and that technical and environmental reviews and public hearings be consolidated.

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It should be noted that the 15-month review period does not apply to public hearings which may be protracted depending on the degree of controversy involved. The NRC intends to consolidate its actions under the National Environmental Policy Act and the Administrative Procedures Act to the extent practicable.

Technical guidance for disposal of low-level waste in concentrations exceeding the Class C limits specified in 10 CFR Part 61 may also be needed. This will depend on the results of the Congressionally-mandated study on greater than Class C waste being conducted by the Department of Energy. The Federal Government has disposal responsibility for this waste under the Policy Amendments Act as you people probably are well aware. Guidance will be provided under 10 CFR Part 60 for deep geologic disposal or under Part 61, if some type of near surface disposal option is pursued by the Department of Energy.

To provide a remedy for emergencies caused by possible restrictions on access to currently operating disposal sites, the amendments include emergency access provisions. Emergency access may be granted by NRC to prevent an immediate and serious threat to public health and safety or to the common defense and security of the nation. Provisions for granting temporary access and extensions are included. The law specifies that prior to granting access the NRC must evaluate alternative practices that could suffice in lieu of emergency access. These include storage, obtaining disposal site access by voluntary agreement, buying unused disposal allocations from another generator or ceasing waste generation.

This last alternative, added in the closing days of the legislative session underscores the intended stringency of the emergency access test. The NRC staff anticipates providing guidance on emergency access requests prior to January 1987, which is the first date at which access could be denied for failure to meet a milestone. The schedules and milestones, as I indicated before, are in the draft schedule document that will be made available during this meeting. We also expect to develop internal procedures for reaching technical determinations and notifying affected parties by 1987. We believe underlying policy in this matter, because of the controversial nature of it will have to be approved at the Commission level.

Rob MacDougall will be discussing this subject, as well as mixed waste and State certification issues after my talk. NRC is assigned a minor role regarding possible State certifications to provide for the management of low-level waste after 1992. Such certifications are an alternative for States that do not submit a disposal site license application by 1990. Under the law, NRC is directed to publish these certifications in the Federal Register and transmit them to Congress. Although the Act does not require the NRC to review the adequacy of the certifications, we recognize that we may be asked to provide our views on this question by Congress, DOE or other States.

A final NRC responsibility under the Act concerns low-level waste that is below regulatory concern. By July 1986, the Commission must establish standards and procedures and develop the technical capability for acting upon petitions to exempt specific wastes from NRC regulation.

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We are meeting this rapidly approaching deadline by preparing a policy statement and a staff implementation plan that will provide guidance on the information and analyses that will have to be provided by a petitioner. We are also improving our computer codes used to assess impacts of such actions and plan to issue a user guide. We are also developing review procedures which will be made available to the public and to potential petitioners.

Depending on experience with individual petitions, the Commission may decide to undertake a comprehensive rulemaking if necessary to facilitate review of future petitions. I would like to emphasize that the efforts will take place in parallel with ongoing work on petitions that are currently at NRC for review, such as the petition we have in house for contaminated waste oil. Kitty Dragonette of my staff will be discussing our progress in this area after my talk.

As I mentioned earlier, the Act will also have an indirect impact on NRC programs in several areas. In light of increased disposal costs and limitations on access to the three existing sites, we expect an increase in licensing actions for interim storage, on-site disposal, incineration and other forms of waste treatment or volume reduction. In March 1986, we issued guidance for on-site disposal of radioactive waste; NUREG 1101.

Licensing work for such practices may also increase if some States fail to meet siting milestones. As a result of our efforts last fall to prepare for a possible closure of existing sites in 1986, which fortunately the Low-Level Waste Policy Amendments Act forestalled, we believe sufficient guidance is in place to allow timely licensing decisions on these other approaches.

I might mention here that there are indications of concern that in addition to the responsible waste management options that I just mentioned, there is the specter of midnight dumping or incorrect disposal of certain wastes. This is something I think we are all concerned about, and if anybody knows of such activities we would like to know about it so that either we or EPA, as appropriate, could begin focusing on them. It is extremely important that these changes in the "disposal environment" such as increased costs, more difficult access to disposal sites, if leading to waste management practices, such as midnight dumping or dumping it down the drain be understood; if illegal disposal is taking place we need to know about it quickly and nip it in the bud. Longer term impacts will occur in the event that States are not able to provide for disposal by 1993 and beyond. Under the Act, any such States would be required to take title and possession of wastes generated within their borders no later than 1996. Any new facilities to handle the wastes until disposal capacity becomes available would, of course, have to be licensed.

I would like now to offer several observations regarding establishment of new disposal sites within the time frames expressed in the Act. As I mentioned before, the NRC has been aware of interest in alternative disposal methods for sometime. The States have not yet identified, as far as we are aware, the specific alternatives they intend to pursue for licensing purposes.

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The NRC is sympathetic to the need for careful study in reaching decisions. It is critical, however, that States and compacts press forward with host State identification and selection of potential disposal sites at the same time they are choosing a specific disposal design. The NRC staff has determined that the site suitability requirements in Part 61 will apply to any near surface disposal method. In effect, a good site is needed, irrespective of any manmade features. For this reason States need not, and should not, delay time-consuming site selection work while they continue to study alternative disposal designs or concepts. There are several approaches that we believe can expedite licensing of new disposal sites; Mr. Davis mentioned the concept of standardization, and I won't repeat that in this particular talk. We think it is extremely important, and I don't think we can overemphasize it.

For any disposal method, including shallow land burial, the NRC staff encourages early interaction between applicants and regulatory authorities through extensive pre-licensing consultation. By fostering an early dialogue, major licensing issues can best be identified and addressed in a timely manner. Potential technical problems can be discussed and means of mitigation can be identified. Early interaction can also help identify any fatal flaws in a potential site or a particular design. This would save the applicant time and resources in the pursuit of an unapprovable application. This is particularly important in light of the tight milestone schedules in the Act and the stiff penalties that will apply if milestones are missed.

Early and open interaction is also vital to local acceptance. A great deal of time and debate has been focused on the State and Federal framework for low-level waste disposal. We believe the States, compacts, industry and involved Federal agencies are all committed to successful implementation of the Policy Act as amended. However, the critical measure of success is the establishment of new disposal sites.

The success of this national venture will depend in large measure on the ability of both regulators and developers to establish credibility and trust with the communities that are to host new facilities. We must approach this task with openness, technical competence, scrupulous concern for quality and firm resolve to attack each licensing issue and resolve it. The milestones in the Act leave little room for delay.

Thank you very much.

At this point I would like some of the staff people, and I will start off with Rob MacDougall, to talk about some of the specific things that I alluded to in my talk. Please feel free, to ask questions. As Mr. Davis indicated, we would like to have this be a two-way meeting. We don't just want to talk to you people. We want to hear from you.

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MR. WOLLE:

Bob Wolle, Southeast Compact Commission. Robert, I would like you to clarify a little bit or amplify a little bit your statements just after you talked about NUREG 1101 and your developments in thinking along storage, on-site storage versus on-site disposal? I wasn't exactly sure where you were coming from there and what your activities are directed at. I say this because at the stage we are in the development of Southeast, a lot is being said about requiring on-site disposal reactor and that sort of thing.

MR. BROWNING:

Okay, on-site disposal would be basically burying the waste on a licensee's facility with no intent to ever recover it, whereas storage would be to store it in a facility with the ultimate intent to do something else with it; either treat it or move it to an ultimate disposal site, and basically the approach used is analyses to show that by the time that waste would ever run the risk of being -- the public would ever run the risk of being exposed to that waste, either by having uncontrolled access to the site or any possibility of migration from the site, it would not be a hazard anymore, namely, it is very short half-lived wastes. Does that clarify your question?

When we use the term "disposal," we mean when you put it someplace, and you firmly intend to leave it there forever, with no more action required, whereas storage is a temporary kind of arrangement where you fully intend to and will have to do something else with it, and that is what the Low-Level Waste Disposal Act is all about. It is disposal with ultimately no intent to have to do anything else with it, not to move it somewhere else or do anything else with it.

SENATOR KANY:

Judy Kany, Maine. We are interested in really long-term storage of 50 years at a nuclear reactor location. Would you recommend that we make certain that particular long-term storage facility would be licensable permanently? Is that what you would recommend in order for us to comply with your requirements?

MR. BROWNING:

By definition, storage would not be, you know, forever.

SENATOR KANY:

I suppose if we applied successfully for permanent disposal at that location, then we would be all right, even though it would be, our intent, our policy as a State to go with the long-term storage? Would you comment on that?

MR BROWNING:

I am sorry. I am not sure I understand the question.

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SENATOR KANY:

We are interested in long-term storage, such as they have in Canada at Point LePreu specifically. We are impressed with their aboveground cells. We consider that appropriate for our location and our circumstances, and in order to meet your requirements, I assume that we would have to apply for a permanent disposal license in order to fulfill our intended policy. Would you comment on that?

MR. BROWNING:

Yes, you would have to apply for disposal, if that is the particular approach, you know, an engineered structure aboveground, if that is the disposal mode that you are focusing in on, and that may very well require some modifications in the event it is concluded that is an acceptable way to dispose of waste, but it would have to be a disposal application, if that is what you fully intend to do, to leave it there forever.

Any more questions?

MR NELSON:

Bob Nelson. What is the definition of below regulatory concern material?

MR. BROWNING:

Below regulatory concern, and we will get into this more when Kitty Dragonette talks is basically waste that is radioactive but which does not require going to a low-level waste disposal site. It may require some other controlled method of disposal but would not have to go to a low-level waste disposal site.

MR. NELSON:

I guess what I am getting at is what is the point of determination as to whether it has to go to a low-level waste site or not?

MR. BROWNING:

Okay, Kitty Dragonette will be talking about what is embedded in the policy document which will be published shortly. She will get into what the criteria actually are.

MR. TRUBATCH:

Sheldon Trubatch from Commonwealth Edison. Could you briefly explain your view on the extent to which Part 61 is a matter of compatibility for agreement States and the extent to which the agreement States can deviate from it?

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MR. BROWNING:

I believe we have made Part 61 a matter of compatibility. The question is if they want to do something less conservative, then it would be a problem. If they wanted to do something more conservative, I think the usual Commission policy is to allow more conservatism.

The rub is whether it really is more conservative or not.

MR. TRUBATCH:

Looking the other way, as I understood compatibility, it was different from identity. So, if a State is doing something different, an agreement State is doing something different, how would the NRC determine that what the State proposes to do is compatible?

MR. BROWNING:

It would, at least, have to meet 10 CFR 61 requirements.

MR. TRUBATCH:

That sounds more like identity than compatibility.

MR. BROWNING:

No, that is the threshold. That is the minimum. If they want to do something more conservative which we understand is the approach; they want to do more engineering, more processing of the waste than what is required by 10 CFR 61, that could still be compatible.

MR. TRUBATCH:

Okay, but you are looking at Part 61 then as a floor?

MR. BROWNING:

Yes.

MR. TRUBATCH:

Is that consistent with the interpretations of compatibility with regard to other regulatory interfaces between the agreement States and the NRC?

MR. NUSSBAUMER:

I think I might be able to shed some light on that. We have issued a letter sometime ago on the compatibility aspects of Part 61, and we said there that the performance objectives which, as you know are fairly general, are matters of compatibility, and the dose limits that are stated in the regulation should be identical. Certain administrative licensing procedures, we said, are not necessarily a matter of compatibility. They are the procedures we follow, NRC follows, but the State has other licensing, processing procedures. They may follow those. As a general rule, the way we view compatibility is that there

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are certain standards that we require be identical, such as the Part 20 dose limits and the concentrations for release of activity to unrestricted areas. There are other aspects of regulations which we think the State should provide, the agreement State should provide the safety concept, but the wording does not have to be identical.

There is a third category of desirable features which we recommend but don't insist on, and there is a fourth category of things the State should not have regulatory provisions for, such as nuclear power reactors or high-level waste disposal.

MR. TRUBATCH:

Thank you.

MR. BROWNING:

Are there any other questions?

MR. SILVERMAN:

One quick question. Don Silverman, UNWMG. You referred a little earlier to the possibility of a comprehensive rulemaking under certain circumstances on below-regulatory concern. Could you comment under what circumstances NRC might under take that, and what the general scope of that type of rulemaking might be?

MR. BROWNING:

Yes, as we get experience with it, if we see there is a large volume of request, and it might be more appropriate to embody our policy statement in a rule, that is what we would plan to do.

MR. SILVERMAN:

A large volume of rulemaking petitions?

MR. BROWNING:

Yes.

At this point then I will turn it over to Rob MacDougall who will get into a little more depth on some of the subjects that I alluded to, and then we will have Kitty Dragonette talk about what is going on with regard to the below-regulatory concern area.

MR. MACDOUGALL:

Thank you, Bob.

If you will indulge me, I would like to make my presentation in an order starting with State certification, moving on to the question of emergency access, and finishing with a status report on what we have been doing with EPA to resolve our differences on the mixed waste issue.

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My strategy here is that by the time I get to the more controversial issues, many of you will be asleep.

Actually, the State certification issue is deceptively small in its apparent importance, but when you think about its connection to the 1990 milestone that both Mr. Davis and Mr. Browning have previously discussed, it begins to assume a much greater importance. That 1990 milestone is when a non-sited State or compact has to submit a complete license application for a disposal facility. January 1, 1990 is effectively the last date by which Congress felt that a licensing process could get started and a non-sited State or compact could have a reasonable assurance of having an operating site by the end of 1992, when the currently operating sites are no longer required to accept out-of-region wastes.

So, looked at from that point of view, the State certification as an alternative to providing a complete license application begins to take on a greater significance. The statutory provision for State certification, and I will quote the relevant portions here, requires that if a State cannot submit a complete license application, the Governor of the State shall provide a written certification to the Commission that the State "will be capable of providing for and will provide for the storage, disposal or management of any low-level waste generated within such State and requiring disposal" after the end of 1992.

The certification must also include a description of the actions that will be taken to assure that such capacity exists. NRC is to take that certification and transmit it to the Congress and publish it in the Federal Register. This raises a question. What is the Commission's role in this, other than being a sort of mailman, if you will, to the Congress? Was there anything more implicit in this requirement? The NRC staff view on this question is that we probably cannot afford to assume that Congress intended us to be no more than a mailman, and that, given the importance of this juncture in the process, Congress wanted some sort of assurance that a certification would be meaningful, that there would be capacity available by the end of 1992 for the wastes generated in the non-complying States. We figure that the Commission will probably be asked what it thinks about this certification, and we are assuming that the Commission will at least want to take some opportunity to determine what sort of role it does wish to play in this process.

The three principal things that the staff is considering are guidance on the Commission's role in the whole process, what sort of information should be included in any State certification, and how the certification would be processed within NRC. For example, would the Commission simply transmit the certification immediately to Congress, or conduct a review of the certification, analyze it, and then send it to Congress? Our thinking on this question, at this point, tends toward the former rather than the latter, so that our review doesn't hold up the process. We may also want to think about some criteria for judging the adequacy of any such certification.

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Because we may need to conduct a rulemaking, we intend to determine the extent of the Commission's actions by the end of this year and identify the procedures for submitting State certifications sometime in mid-1988.

Unless there are any questions on the certification issues, I will move on to emergency access. As you know, under Section 6 of the Low-Level Radioactive Waste Policy Amendments Act, the Commission is empowered to grant emergency access if necessary to eliminate an immediate and serious threat to the public health and safety or the common defense and security. Such petitions for immediate access may come from either individual generators or the Governor of the State on behalf of specified generators, and the request is to contain "such information and certifications that the Commission may require."

Essentially there are two kinds of findings that the Commission will have to make in judging whether to grant a petition for emergency access. The first clearly has to do with whether there is in fact an immediate and serious threat to public health and safety or the common defense and security.

The second set of findings, which is potentially a good deal more complicated, is whether the threat cannot be mitigated by an alternative consistent with the public health and safety. Such alternatives would include storage, either on site or at an independent facility, and obtaining access by voluntary agreement with any one or more of the currently operating commercial low-level waste disposal sites. Another alternative would be to purchase disposal capacity that is unused from a reactor's allocation under Section 5(d), and a fourth possibility is to cease the activities that generate the waste.

If NRC can make the finding that there is an immediate and serious threat to health and safety and that this threat cannot be mitigated by any reasonable measures consistent with health and safety, NRC then has to notify the Governors of the States involved, and we have to designate an appropriate disposal facility or facilities to accept the wastes. We will also have to describe specifically the waste and its characteristics and, also, the volume and duration of the waste that must be accepted with a limit of 180 days on the initial grant of emergency access.

There is a provision for NRC to grant temporary emergency access for up to 45 days, if it can find that there is an immediate and serious threat to public health and safety, but it needs more time to decide that threat can be mitigated. The grant of temporary emergency access, in effect, gives NRC time to grapple with the questions of how mitigatable, if you will, the threat to health and safety is.

NRC can also under the law grant one extension of 180 days, if it continues to be necessary, and the generator and the State, and I emphasize this, have acted diligently and unsuccessfully to eliminate the health and safety threat.

The NRC staff at this point is planning to put out in the near future a notice of intent on how we plan to proceed, and we expect that by the

end of 1986, we will have to have proposed procedures and criteria in place to deal with emergency access petitions. We hope to have a final rule by mid-1988.

There are implicit in this whole section a number of questions about how available this emergency access is supposed to be, and let me begin by assuring you that if the threat is immediate and serious, and if it cannot be mitigated, the NRC will provide emergency access. But those ifs are very important ifs, and the tests for whether a potential or actual emergency can be mitigated are very stringent. They are in the statute, they don't give NRC a whole lot of flexibility for interpretation.

We think it will be very difficult for an applicant or a Governor to show that a threat cannot be mitigated using any one of the four things laid out in the law or any other reasonable measure consistent with public health and safety. This is to say, then, that we don't think Congress intended the emergency access provision to be an escape clause for delinquent States or compacts. This is also to say that if there can be a showing of an immediate and serious threat to public health and safety, it will be very difficult to get much more than a 45-day grant of emergency access while NRC grapples with the question of whether the emergency can be mitigated.

The purpose of the notification of intent is to lay out what we construe the law to be on these questions and present the message I have just given you to the general public. We feel we owe it to States and licensees to make this clear, that they cannot assume that a grant of emergency access will be automatic or even that it will be easy. So, both the States and licensed generators need to start preparing now for the possible loss of access. Generators, for example, will have to consider the development of storage capacity or the possibility of negotiating access for their wastes if they think that they are in jeopardy of losing access to a site.

If the Governor is going to be submitting a petition to the Commission on behalf of generators who believe they are facing an emergency access situation, the State agencies that support the Governor will probably want to assure themselves and the Governor that the petition has a good chance of being granted. So, if you are an agreement State agency or even if you are a developmental authority, you may want to make sure that the generators do take up the slack and that they have taken the available measures to mitigate the potential threat.

Note also that in the law, the provision for the 180-day extension after the initial grant of access speaks of the State, as well as the license generator, making diligent efforts to mitigate the potential threat. These are obviously very important and consequential issues, and we are going to need a significant amount of input from both the States with currently operating sites, who will have to help us determine an equitable procedure for designating a currently operating non-Federal disposal facility to take any wastes that we think require emergency access. We will also need a considerable amount of input from the non-sited States as to the procedures and criteria and the information requirements that will be needed for a successful petition for emergency access.

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I doubt if I have put to rest or allayed all of your fears on this question, but in the interest of time I probably should move on to mixed wastes, unless there are a few questions.

MR. KRAFT:

I will ask a quick question, Steven Kraft, Edison Electric Institute. Is the NRC role in this area limited to granting or denying petitions for emergency access or can the NRC order some third party to accept someone else's waste in storage as one of the mitigating circum -- I am just kind of curious to know whether it goes one way or the other way, thinking about, say, a reactor that might have a licensed storage facility being forced to take other generated wastes in that State or whether the NRC is not allowed to order that. That is just a thought that crossed my mind in talking about these mitigation areas.

MR. MACDOUGALL:

It is certainly a fair question, and not being a lawyer, I can say pretty much what I will on legal questions and pay for it later. Unless there is somebody from our legal staff who thinks otherwise, my initial reaction would be to say that the answer is no, that the Commission would look to the applicant to have tried to arrange for some other facility to take the waste.

MR. KRAFT:

The applicant or State.

MR. MACDOUGALL:

The applicant or State, yes. The applicant could either be the Governor or a particular generator. The only ordering NRC could do would be in the nature of a notice that the waste does have to be granted emergency access by a designated currently operating disposal facility or facilities that are to take it. I think that is a justifiable reading of Section 6, and since I haven't been corrected yet, I guess I will let that stand.

On the mixed waste issue, this was an issue that NRC had hoped the Congress would be able to resolve in the course of putting together the Low-Level Waste Policy Amendments Act, and both the NRC and the Environmental Protection Agency had supported an amendment to delegate the permitting authority for the hazardous portion of mixed low-level waste from the EPA to the NRC which then could redelegate it to an Agreement State.

We no longer support that provision, and I guess in retrospect we are somewhat thankful that it didn't go through because it was based on an incomplete NRC understanding of where the Environmental Protection Agency was with respect to implementing the 1984 Amendments to the Resource Conservation Recovery Act.

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We also had a misunderstanding with EPA on the nature of the delegation. EPA expected that it would retain inspection and enforcement authority over NRC licensees, while NRC or its Agreement State counterpart would merely have permitting authority in the first instance.

NRC remains concerned about the mixed waste issue for a number of reasons. The regulatory uncertainty could make it difficult for a non-sited State or compact to meet the milestones set forth in the Low-Level Waste Policy Amendments Act, and in particular, the 1988 milestone for the development of a siting plan that must delegate all of the necessary authorities to all of the State agencies needed to implement that plan. The States, I think, can legitimately argue that it will be difficult to develop such a plan if they are not certain of what sort of regulatory requirements it will have to meet. If it will have to meet not only NRC's but EPA's requirements and if there are inconsistencies in those requirements, meeting an NRC requirement could enhance the risk of your running afoul of an EPA requirement.

If this proves to be the case, and the 1988 milestone is missed, and people begin losing access, we believe that there could be some health and safety consequences that are not insignificant. So our concern about resolving the mixed waste issue is not entirely a matter of intergovernmental altruism; we think we have a health and safety basis for that concern, as well. This could take the form of increased pressure on storage capacity, increased interest in alternative methods of disposal, such as on-site disposal, which will mean an increased caseload for NRC licensing and, also, of course, the possibility of unauthorized disposal practices, such as midnight dumping.

The staff prepared a policy paper for the Commission that is publicly available, and if you haven't got a copy of it, we could make it available to you, if you will see me after the presentation.

In the policy paper we made several recommendations based on certain assumptions: that it would, for example, be desirable to eliminate dual regulation if possible, minimize the potential health and safety threats from the regulatory uncertainties involved, and remove any obstacles to continued progress on the siting of new facilities.

The options that were presented in the staff paper essentially fall into two categories. One had to do with minimizing the volume and toxicity of mixed waste requiring disposal at a licensed site. We envision that this would take place through NRC guidance on the existing regulatory requirement in Part 61 for the treatment of wastes with hazardous components to eliminate the non-radiological hazard to the maximum extent practicable, but if necessary, we may have to ask for additional statutory authority. That was one area where we made a recommendation.

The second area had to do with resolving the differences between our rules and EPA's rules and statutory requirements, and we came up with two recommendations there. One was to depressurize the siting process

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for the non-sited States by putting the development of disposal capacity for mixed waste on a separate track from the rest of the waste so that the uncertainties associated with the mixed waste would not hold hostage continued progress on the great majority of the rest of the waste by volume. The third recommendation was for direct NRC administration of the Resource Conservation and Recovery Act, so that we wouldn't be returning to EPA for a by your leave whenever we felt it necessary to take enforcement actions or inspections, or issue permits.

We briefed the Commission on this question, and we are currently working to provide more information by the beginning of the first week in July.

Essentially, the Commission asked the staff to provide a legal opinion on our current authorities to require treatment and volume reduction and our current authorities to deal with the possibility of a prohibition on the disposal of mixed waste at present and future licensed commercial disposal site until such time as the differences between NRC and EPA regulations are resolved.

The technical staff was asked to find out EPA's reaction to our three recommendations, find out about the possibility of EPA's issuing its siting criteria early, so that the States would have greater confidence in proceeding with the development of siting plans for the 1988 milestone. Finally, we were asked to establish a process for resolving the differences between our respective agencies, and revise our recommendations if necessary in light of our negotiations.

The process is working from the bottom up. The technical staff from both agencies get together and try to resolve their differences into something they think makes technical sense on the various issues in dispute. They then work the proposed technical solution through their respective management chains, and hopefully, if there is something mutually recognizable at the end of that process, we will be able to formalize an agreement between the agencies at an authoritative level of management.

NRC's technical staff has been meeting fairly intensively with the EPA staff on questions such as the definition of mixed waste, siting criteria, facility design requirements, and also such issues as the burning and blending of hazardous wastes because incineration is obviously a disposal technique of choice for certain of the wastes, such as liquid scintillation waste.

It appears at this point that we cannot get any guarantees from EPA that they will have their siting requirements for new hazardous waste disposal facilities in place by the 1988 milestone. We are hoping we can come up with some concepts that would permit the State to proceed on a relatively informed and confident basis.

On the other things of interest to you we have not identified anything so far in our discussions that will require legislation to resolve them. That is not to say that we may not ultimately have to do that, but since legislation would be required to resolve the question of dual regulation, and authorize a single agency to regulate mixed waste, the

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absence of any other issues requiring legislation makes it somewhat unlikely at this point, from the technical staff's judgment, that legislation will be proposed. The Environmental Protection Agency has been taking some fairly strong cues from Congress that the two agencies should try to resolve their differences administratively as much as possible before coming back to the Hill with any proposals for legislation. We accept that as a fair burden of proof, and we are carrying out that effort.

In sum, the jury is still out on whether legislation will be needed, but at this point, we haven't identified anything except for resolving the dual regulation question that would require it.

So, with that, it is probably just in time for a break so that I can miss questions. But I will be available after the break to answer any additional questions, of come up and see me during the break.

Thank you.

MR. NUSSBAUMER:

That was good timing, Rob. Let us take a 15-minute break and reconvene about 10:20.

(Brief recess.)

MR. NUSSBAUMER:

Okay, the State attendees should all have a copy of the survey form (Appendix D) which we would appreciate your filling out and turning in after lunch or by midafternoon.

We recognize that some of the information that we are asking for might be considered policy-type questions, but we would like to have your personal view, if that is the case, and you can caveat it if you want to, and say that this is your view and not necessarily that of the State, but we would like some input. This would help us in getting ready for our discussion tomorrow morning.

Our next speaker on the panel is Kitty Dragonette who will review with you radioactive waste below regulatory concern.

Kitty?

MS. DRAGONETTE:

Hi, I have four vugraphs (Appendix E). They are not really vugraph quality, but they are good talking notes. So, you won't have to write as much, and there are extra copies in the back of the room. If you will hold up your hand, I have been promised that you will get custom delivery. The first one just reminds us that Section 10 of the Policy Amendments Act requires NRC to establish standards and procedures and the technical capability to act on petitions for determining that certain waste streams are below regulatory concern, that the radioactive content doesn't require regulation, and we were given six months to do that, and that six months is up in July.

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Our earlier speaker mentioned that we might consider a generic rule making as a follow on to things that we are working on right now, and that is on this chart, but I will get a little bit more into the policy statement, but basically we are trying a policy statement to meet the six months mandate because that is doable. We are going to issue it if EDO and Commission approve as an effective policy statement but requesting comments and then saying, depending on the comments on the policy statement, depending on the types and numbers of petitions, we would then consider whether we needed to go ahead with some sort of generic rulemaking as opposed to just responding to the individual petitions for rulemaking.

That is all this chart is showing you. One, July is a key date, and two, the option for the generic rulemaking.

The strategy we are following, as I mentioned, is a policy statement. We considered whether to try to resolve some of the issues up front in a fairly comprehensive rulemaking in which we would establish dose limits and other decision criteria for processing petitions and then having each individual rulemaking on an individual waste strain be a very minor turn of the crank in response to this fairly comprehensive rulemaking. We decided that in view of the language in the Act and in view of the six months mandate that it was more practical and prudent to go with the policy statement that we felt we could develop and issue and work with, and that it was much more amenable. We could do it in six months, and then we could revise it more readily if experience dictated. So, we are going with a policy statement.

Another key point in the strategy is that the petitioners are going to be asked to generate and provide the basis for the rulemaking, and it is going to be a generator or generator trade group or organization initiated rulemaking, and the information and analyses and data on the waste and the calculated health effects and all those things would be provided by the petitioner.

Another part of the strategy is that it is an exemption from disposal at a Part 61 type license facility but not necessarily unrestricted release. For example, the type of rules that we envision being petitioned for would say that waste oil with these nuclide concentrations can be burned on site or sent to an EPA hazardous waste oil recycling facility or some other method like that. The rules would identify the specific waste, the specific nuclide content and the specific method of disposal. The receiving facility would not, the hazardous waste facility or the sanitary landfill facility, would not be a licensee. At that point it would be below regulatory concern, but the generator would only have certain options for that waste. He would be limited in what he could do with it.

Individual licensees can continue, if they have unique waste disposal problems or while they are waiting for rules to be processed, to apply for individual licensing actions under Commission rules in 10 CFR Part

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20.302. The types of petitions we anticipate would be national in scope, you know, a whole category of licensees, power plants, waste oil or compacted trash or whatever, that it would be a category or a national scope. It could be a compact in scope, but at least not single licensees. For an individual licensee it really is more efficient of his time and ours, too, to handle that on an individual basis. So, that is another point in the strategy, and the rule makings that would grant the petition would be a matter of compatibility to give all generators around the nation an equal opportunity for alternatives to the licensed site disposal.

The NRC staff response at this point is being done in two parts. One is to establish the standards and procedures, and we are doing that with a policy statement and our accompanying staff implementation plan that would be published in the Federal Register. Between those two documents, (i.e., the policy statement and plan) they are like a standard format and content guide for a petition, and outline the type of information to submit. The policy statement lists the decision criteria. Their meaning and intent and how the staff initially plans to interpret those is in the staff implementation plan, and the plan includes administrative procedures on how we have tried to streamline the process internally to be able to act on the petitions quickly.

The second part to establish the technical capability has involved some people getting up to speed and converting an existing methodology in the published NUREG converting it to a personal computer, PC, getting so that we are comfortable with it, developing a user guide and generally getting staff knowledgeable in how to process one of these and the type of analyses to do. So, that is essentially the two parts of how we are meeting it, standards and procedures in a Federal Register notice and then you know, confirming and getting up to speed in house.

This one is probably not legible. Now, you can see why I made sure I had hard copies because that is so busy, but I thought that you would be interested in the type of decision criteria that staff is proposing. If you meet these decision criteria, it is very likely, we believe, that we could process the petition quickly, expeditiously, as the Act calls for, and they really fall in four areas; sort of some general criteria, criteria on doses, criteria to do with the waste itself and criteria on implementing the below regulatory concern disposal.

The general ones are the environmental requirements under NEPA, that we would expect to issue a negative declaration and that there is a good cost benefit, when you look at both the dose and the dollar and other considerations, qualitative, quantitative, that there is a good cost benefit.

On exposures there are decision criteria on individual dose limits, that the collective doses be small, and we suggest that the petitioner look at the collective doses to the sanitary landfill workers or small population groups, as well as the larger populations that might be exposed through groundwater, and, also, to take a look at the consequences of accidents and make sure that those are reasonable.

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On the waste, several of those, that the waste is compatible with the proposed disposal method, for example, that you don't send or that the petition doesn't suggest that you send something that qualifies as a hazardous waste to a sanitary landfill. If it would qualify under EPA rules as a hazardous waste, then if it is going to be disposed of as below regulatory concern, it should go to a permitted hazardous waste facility. That is what that means, compatible, and it, also, means physically compatible. If you propose incineration, it should be combustible, you know, common sense ones, but from both a technical and a legal point of view, that the waste and the disposal or the rule would be usable on a national scale, that it is produced by a number of generators and would be useful, that you understand the waste; you have characterized it, and you can make some reasonable projection on what this waste will look like over the foreseeable future, but you have actual data on the waste; you have done some measurements. You know what the range of activities and typical concentrations are and lastly that there is negligible potential for recycle of the waste. We are talking about things that have really no resource value or no reuse as tools or equipment or something like that, and then finally on implementation that compliance programs are feasible. One of the suggested submissions is a sample survey program, so that you could demonstrate that there is at least one way licensees could reasonably establish that their wastes met the nuclide limits that were spelled out in the proposed rule and that there was some continuing way to check, at least for gross compliance and then periodically with more comprehensive surveys, and next, that there is no license needed for the off-site facility that is going to receive the waste for either incineration or treatment or disposal. Whatever you are proposing to do with it, the receiving person should not need a license or otherwise it would not qualify for below-regulatory concern and lastly, that there not be any regulatory obstacles. That is sort of related to the compatibility question; for example, a legal obstacle might be proposing a hazardous waste to a sanitary landfill or it might be that you had to label it as radioactive under DOT rules which would foul up the implementation. So, those are the kind of regulatory obstacles. So, very quickly, those are the decision criteria that staff is recommending be established through the Commission policy statement, and that statement is with the Executive Director for Operations, and they are reviewing it pretty carefully.

It hasn't made it to the Commission yet. It's at the EDO and then goes to the Commission, and so, we are still hopeful that we may make that July date and publish.

I talked very quickly. I am sure you must have some questions. Nancy?

MS. KIRNER:

Nancy Kirner from the State of Washington. Environmental groups in the State of Washington when I have spoken to them about how the NRC is proposing under the Low-Level Waste Policy Amendments Act to establish criteria for wastes that could be released which is below regulatory concern, they have been very uneasy over the idea of below regulatory concern waste, over the idea of taking something that used to be

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radioactive, and now, we are just putting it out into the normal environment. What provisions is NRC contemplating to inform the environmental community to educate the people, not only the environmentalists, but, also, the, for instance, trade organizations representing your sanitary landfills and, also, EPA and, also, the State EPA liaison? These people appear, at least from what I am gathering in the State of Washington to be very uneasy over the uncontrolled indiscriminate, these are their words, release of radioactivity.

MS. DRAGONETTE:

At this point, we haven't really done any education until we get our own act together in house, you know, that the policy statement approach is acceptable to the Commission, that the decision criteria make sense to the Commission. We did ask EPA to review an early draft. So, you know, on an informal basis we have coordinated with them, but it reminds me of one point I failed to make. This policy statement is merely guidance for petitioners. There will be, in response to those petitions, assuming that they are reasonable and well supported, a proposed rule that would be issued for comment. So, all of these groups then would be able to respond to the proposed rule and the waste that was described and the disposal options that were described in there in the analysis. So, I would think, you know, may be I hadn't really given much thought to any generic educational efforts, but there is that important opportunity for input on each waste stream because each one involves the formal rulemaking process, a proposed rule, comments and then final. That is as best I can answer right now. The decision criteria do cover individual doses, collective doses to worker. The computer codes that we are planning to use evaluate the potential exposures to workers from, you know, transport workers, the sanitary landfill workers, all those people. So, their potential exposures are looked at individually and collectively in the analysis that we would plan to do and that we are asking petitioners to look at, so that they would have all of that information on that specific waste in order to react to it.

Anyone else?

MR. TRUBATCH:

Sheldon Trubatch, from Commonwealth Edison, again. Could you comment on the choice of procedures, the decision to go to rulemaking rather than something more informal?

MS. DRAGONETTE:

One of the reasons these are stamped "draft" is that the agency as an agency still hasn't decided that a standard format and content-type policy statement that would solicit petitions for rulemaking is necessarily the appropriate course of action. There may be some others that the EDO is considering, but that is from NRC's perspective. Are you asking from the generator's perspective; what is in his best interests, whether he should ask for, apply individually?

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MR. TRUBATCH:

No, I am asking from the NRC perspective and not so much the format of this policy statement but the decision to implement Section 10 of the Waste Amendments Act through just formalizing or specifying rulemaking procedures in this particular case rather than using an alternative procedural mechanism, such as exemptions which the NRR staff routinely grants.

MS. DRAGONETTE:

Now, as I understand the exemptions that NRR grants, it is in response to a specific individual licensee, and it would involve a specific, that is one licensee and his specific waste. It would be that limited in scope.

Now, that opportunity is still there. What I am talking about is doing it generically for the waste streams, so that all reactor licensees could use it without having to file individually. So, it seems to staff, at least, that rule making makes sense only if it is a waste that is generated by a number of licensees. It, also, emphasizes that what we are doing is an alternative. It is equivalent to a generic 20.302, since all people could use it, but it is being open and up front about it. It is establishing it through rule making. It doesn't have the connotation of an exemption because what we are really doing is generically responding to is "NRC I have this alternative way to get rid of waste, either approve it on an individual basis or let us approved it on a national scale."

MR. TRUBATCH:

Okay, but does that mean that if a utility has a bag of waste that it wants to dispose of in the back forty, that there is still a third procedure, neither 20.302 and not this generic rule but to come in for an exemption, and if so, by what criteria would that be judged?

MS. DRAGONETTE:

An exempt of what?

MR. TRUBATCH:

To any regulation, that this bag of material be treated as if it were not radioactive because its radioactive content is so low as to be below regulatory concern.

MS. DRAGONETTE:

I don't consider that that would be an exemption; 20.302 says, "A licensee can propose any alternative handling of the waste that is not otherwise provided in the regulations." There is an opportunity for any type of alternative, and I don't know why that would be considered -- in my mind that is not really a true exemption. It is taking an opportunity for a built-in alternative proposal. So, to me, they would be the same thing.

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MR. TRUBATCH:

So, this proposed draft policy statement would be the only implementation of Section 10 of the Waste Amendments Act as far as the NRC staff currently conceives of it?

MS. DRAGONETTE:

Yes, well, it is gearing up to respond to the petitions. The petitions that would be filed are the true test of it, but yes, the only thing we plan to do is issue this guidance on a petition and then respond to the petitions.

MR. TRUBATCH:

Okay, thank you.

MS. DRAGONETTE:

The other people are working on 20.302 guidelines, and some of them have been issued for non-power plants, and I understand there is a draft pretty close to completion for power plants for 20.302 disposals, you know, where there are individual proposals.

We read Section 10 in saying, "Respond to petitions" to mean petitions for rule making.

MR. TRUBATCH:

I was just curious, as a final question, why you read it that way, as opposed to, it says, "Petitions under existing," to use existing authority to grant petitions to exempt regulation, and I could conceive of that simply meaning someone comes with a piece of paper that says, "Petition. I have a bag of waste which I don't want you to regulate because I don't think it is radioactive enough to warrant any regulation. Please grant that petition."

MS. DRAGONETTE:

I think we attach more significance to the use of the term "petition" as opposed to application or proposal, and if it is going to make sense, you need to look at it on a national basis anyway. So, this gave us an opportunity to look at this in a comprehensive manner, rather than having hundreds or thousands of 20.302 disposals, that we would have data and information on the waste and the projections and could look at the thing from a national scale, and we feel that that is part of the picture, too.

MR. TRUBATCH:

Okay, thank you.

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MR. RECKNAGEL:

John Recknagel from Public Service Electric and Gas. I am a little puzzled by your criterion No. 7, usable on a national scale. Could you help me understand first, what is meant by that and what the reason for it is?

MS. DRAGONETTE:

What is meant by it is that hopefully the waste stream that is being petitioned for would be one that is generated by the majority of the category of licensees. For example, it would be compacted trash from all PWR's or it might be wastes with half-lives less than 100 days, from hospitals or universities. It would be a generic waste stream that both NRC and agreement State licensees, wastes that they were all generating and could take advantage of, rather than an individual licensee with his unique waste. You know, he has a pipe leak. He has the soil. You know, that can more efficiently be handled on an individual basis, I believe because it would be unique circumstances. It is meant to be something that is routine and predictable enough and common enough that people all over the country could take advantage of it in order to warrant the petitioner's effort to put together the information we have asked for and for the Commission to bother to go through the rulemaking. It should be something that is useful to many people. That is all it means.

MR. RECKNAGEL:

Thank you.

MS. CONNOR:

Lynn Connor, Dock Search Associates. Have you talked with NRR at all on how you are really dividing this up, that they understand what part you are taking over what part that still falls under them for a license application?

MS. DRAGONETTE:

NRR has concurred in the policy statement and the decision criteria. The resource arguments and who is going to be the lead office is still under negotiation.

Any other questions?

MR. NELSON:

I am Bob Nelson. I would just like to clarify that 20.302 will have good hard figures for determination of below regulatory concern material or is it going to be kind of generic still, and determined on a case-by-case basis from that?

MS. DRAGONETTE:

The policy statement and these decision criteria are solely for the purpose of preparing petitions for rule making that would be handled on

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an expedited basis. The decision criteria are not applicable to individual proposals under 20.302. As I understood, that was one question, would these apply to the individual proposals, and the answer is no. The second part, do we have numbers, the policy statement has language on the individual exposures, that the individual exposures, or whole body exposures are no more than a few millirem per year using ICRP 26 and 30, cummulative internal and external. Then the staff implementation plans says, "Hey, it is a lot easier to justify if the maximum individual exposure is one, but it is in the implementation plan." So, the implementation plan has some more numerical guidance that we feel will help grease the skids for these things or more easily justify it on the petitioner's part and through the rulemaking process. There is, on the, for accidents, for example, it recommends using the ICRP 100 millirem per year as an upper limit for any accident scenario so that you are below the action level, for a member of the public in any accident that you could reasonably postulate in handling transport and disposal this way. So, the guidance and the staff implementation plan does have some more numbers, but they are recommendations that we think will make it more easily justified and more readily processed.

Nothing in this policy statement or implementation has the force of rule. It is going to be published probably in Part 2, but it would be informational. It is guidance and policy which is flexible.

MR. NELSON:

So, if we had some material that we were not sure of where we would apply to the State program or the NRC or whoever for the determination?

MS. DRAGONETTE:

You could still apply individually.

MR. NELSON:

To whom?

MS. DRAGONETTE:

To whoever licenses you to possess the material either NRC or the agreement States.

This gets to be a matter of compatibility when granting a petition for some kind of waste from a hospital. If the rulemaking was for hospital waste, then that is one that both NRC and agreement States would license. It would be a matter of compatibility then for the States to follow suit. The biomedical rule wasn't made a matter of compatibility. Most States did follow it, but this time we think in view of the mandates and the restrictions under the Act it makes even more sense, and it is more equitable to be upfront, be a matter of compatibility, and it would be like everyone has to adopt the biomedical rule.

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MR. NELSON:

Thank you.

Mr. KRAFT:

Steve Kraft, EEI, again. I think there is some confusion that is reflecting itself in the questions here, Kitty, and I just have a suggestion. The problem is, I think, of these 14 criteria, some of them tell you whether or not you meet the threshold of a rulemaking versus an individual action, be it an exemption or whatever, and some of them define whether the petition for granting BRC under the rulemaking gets granted or not.

MS. DRAGONETTE:

They are all designed as decision criteria to use in judging the petition.

MR. KRAFT:

So, the petition could be denied on the basis that it doesn't meet the criteria to be a petition.

MS. DRAGONETTE:

I should have made that clear. These decision criteria are for petitions that we would handle expeditiously. Now, if it doesn't meet these decision criteria, you have got a couple of options. One is, if it is a unique situation you can come in as an individual licensee for licensing action. Secondly, it can just go on a routine track for rulemaking. If it requires NRC research or contractual support, it is going to go on a slower track, and probably be a lower priority than those that are fully supported. This policy statement is asking for a great deal of information from the petitioner, and in response, we are trying to promise we will process it quickly. So, that means we would assign it a higher priority, but it doesn't necessarily mean it would be denied, only that we could not process it quickly.

MR. KRAFT:

Let us, for example, pick out one that I think is pretty obvious for this business of whether it ought to be a petition or not, No. 7. Let us say that you met all the rest, all the other 13, and even on your own you could tell you really have a waste stream that is unique to your facility, whatever your facility is, and it is not something that a whole lot of people are dealing with. Does that mean automatically that you are suggesting "Don't even bother to submit the petition and go a different route"?

MS. DRAGONETTE:

I would recommend it as the most efficient use of your resources and ours. You could use these decision criteria and say, "Hey, if this was produced on a national scale, it would be a suitable candidate," and it

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could be part of your arguments in your licensing application or request. You could use them as guidelines or something, but it would be voluntary. It is not intended to have any direct application to the individual proposals, but it is, obviously if it would qualify, that would have a bearing on the suitability of the individual proposal.

MR. KRAFT:

I just had the feeling that a lot of the questions were being asked on the basis of people who had individual streams from their own facilities specifically in mind or maybe even individual disposal actions in mind and that becoming confused with whether it met the threshold criteria of being even a petition or not, not that it would be denied BRC status but it would be denied BRC status as a nationwide kind of rule as compared to an individual waste.

I mean I heard several questions and answers along that line. I just thought that I saw three or four things in here that could be kind of, look, forget the technical stuff. If you don't meet the procedural stuff, don't even bother. Let us go talk about it somewhere else. If you meet the procedural stuff, then come in and let us talk about the technical stuff. I just saw a natural way to clear up some of that confusion. That second thing I wanted to ask you about was if something is from the NRC standpoint below regulatory concern, it obviously may not be so from EPA, and in fact, one of the criteria here implies, and you made in your discussion a point that part of the decision is knowing what the disposal methodology would be, and if it is RCRA-controlled waste, even though you may not be concerned about it, you would like to know that it is going to go to a RCRA-licensed site. Is this going to open up another opportunity for swords to cross between NRC and EPA?

MS. DRAGONETTE:

As I envision the rules that would be issued in response, it would say that a licensee can transfer this waste, if it is going to go to a hazardous site. Presumably, then the non-radiological properties would mean it would qualify as a hazardous waste, because they don't want to fill their facilities up with stuff that isn't hazardous.

It would say that you could transfer this to that type of facility, and presumably it wouldn't have to be labeled as radioactive, but it would still have to be labeled as hazardous. That is another point I should have made, that NRC's finding will be based on a radiological finding, and below regulatory concern is only for the radiological content. It would still be subject to any of the requirements that would apply to the physical-chemical nature of the waste. If it had to be manifested as hazardous or whatever, it would still have to be.

MR. KRAFT:

Absolutely, I agree with what you said, but just following up on the first question that was asked in the series, the NRC is taking it upon itself to decide whether a given waste stream is RCRA versus radioactive disposed. I am stating it poorly but whether or not --

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MS. DRAGONETTE:

That we are going to unilaterally say, "You can send this stuff to their site."

MR. KRAFT:

That is it.

MS. DRAGONETTE:

They are going to say, "No way, Jose."

MR. KRAFT:

Thank you. That is exactly the way to say it, sure. Otherwise it would qualify as mixed waste and fall into the mixed waste quagmire frame.

MS. DRAGONETTE:

It is qualifies as a hazardous waste --

MR. KRAFT:

And you declare it to be below regulatory concern from a radioactive standpoint, is EPA or a hazardous waste operator going to say, "Wait a minute. I disagree with that"?

MS. DRAGONETTE:

There is a potential for that. They might respond in the comment period on a proposed rule, but the purpose of our review and finding would be that you don't need to worry about the radioactive content, and if it is going to be implementable, then it shouldn't be labeled as radioactive, but they may still express generic concerns.

MR. KRAFT:

But we know that the technology is available to monitor. In fact, one of the beauties of radioactive material is that you can monitor extraordinarily low-levels very accurately that may fall below regulatory concern. I don't know. I could just see a whole raft of difficulties and counter regulations being developed by a lot of other facilities and operators that need to be thrashed out during this process. I am not suggesting these are show-stoppers, must that they need to be thrashed out and thought through extremely carefully in the process, and it not only applies to the rulemaking situation when you have got a generic waste stream, it applies to your specific decision, also, in individual materials.

MS. DRAGONETTE:

I know I have had calls from people saying, "Do I need to install some sort of detection in response to the biomedical rule?" I said, "No,"

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the gamma detectors wouldn't detect the carbon and tritium, but that is one of the problems that I think will surface in the individual rulemakings. Until we get some petitions and see what disposal methods people are requesting, it is sort of an academic question, but depending on whether it is proposed for incineration or if it is proposed for sanitary landfill or whatever, but there is nothing in the work thus far to do any coordination with those groups.

MR. KRAFT:

A last question, along the same lines, is the work that you would be doing to analyze whether materials fall under BRC, in order to do that you will follow the disposal pathway? Because it is a dose-based analysis, would you be using somesort of comparative -- I hate to use a word and not quite know whether I am using it correctly, but some kind of comparative hazard index where by you would compare it to the materials already allowed to be disposed of in that sanitary landfill or in that hazardous waste site as a way to allay the fears that were expressed?

MS. DRAGONETTE:

That is included in the recommended information that they be submitted and describing the waste and being compatible with the disposal methods. One of the decision criteria says that the non-radiological properties are no different from wastes that are ordinarily sent to that facility. It is one of the things we are asking the petitioner to demonstrate, that if you are going to a sanitary landfill, that there is nothing unique about that waste, that if it was not radioactive it would go -- I am getting tongue-tied.

MR. KRAFT:

It would be an interesting exercise to have a sanitary landfill to go out and monitor for radiation. It is the waste streams that it is receiving, materials, as we all know, are radioactive by their nature.

MS. DRAGONETTE:

The thinking and the strategy is that the sanitary landfill operator would not know he was getting it, would not be required to do any monitoring of the incoming packages or groundwater for radiation. The only controls and reporting would be on the generator. We anticipate requiring the generators to do, say, annual reports on, "I have sent so many tons to sanitary landfill X," and for him to keep records of what his disposal is and to document that he knows it went where it was supposed to go. So, all of the controls -- there will be controls on the generator until the transfer to that sanitary landfill, but the sanitary landfill operator, we anticipated no monitoring of personnel or environmental or anything. That was why that decision criteria is in there. If you have to go to that, then it is essentially another licensed site. It wouldn't be below regulatory concern. At least from

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NRC's view they shouldn't need a license. You are saying from their view they --

MR. KRAFT:

I am just --

MS. DRAGONETTE:

They may want to take precautionary measures.

MR. KRAFT:

I just think that there is a question that was raised earlier that may be of concern and we need to look at it, "Okay, that is what NRC says, but you know EPA isn't going to defer, nor will State agencies necessarily defer to the NRC in regulating sites under their control." That is the only question I am raising.

MS. DRAGONETTE:

I think that will be an issue in each individual rulemaking, depending on the specific method of disposal involved. I don't know how to avoid that. We only have the authority to say, "Don't worry about the radioactive content," but it is still trash. It still has other properties.

MR. KRAFT:

I understand.

Ms. DRAGONETTE:

So, that is as far as we can go.

MR. DORNSIFE:

Bill Dornsife, from Pennsylvania. Kitty, I would hope you learned your lesson from the biomed rule when you are talking with DOT on this through your MOU that the biomed rule didn't really work until DOT didn't require these things to be marked as radioactive material.

MS. DRAGONETTE:

That is why there is a decision criteria on no regulatory obstacles that includes, "Hey, if you are going to send it to a hazardous waste site, there had better be a hazardous waste site, and it had better not need to have a DOT label."

MR. DORNSIFE:

The point is it has to be exempt from DOT regulations or people aren't going to accept it.

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MS. DRAGONETTE:

Right, and the other people are commenting that even if it is anonymous, they still may not. So, we are trying to sneak it in, but it may not --

MR. DUNKLEBERGER:

Jay Dunkleberger from New York. One question. I am not sure whether I heard you right or not. The biomed rule is not a matter of compatibility right now? I thought I heard you say that that would be made a matter of compatibility. I just wanted to clarify how and whether that is true or not.

MS. DRAGONETTE:

I wasn't talking about going back and doing anything with the biomedical rule. I was trying to use it as an example that it was not made a matter of compatibility. New rulemakings pursuant to this policy statement would be made a matter of compatibility, future ones, not going back and picking that one up.

MR. DUNKLEBERGER:

So, if somebody, for instance in a facility in an agreement State that was not agreeing with the biomed rule wanted to come to the NRC with a petition on that same rule to put it under this, is that a feasible option that somebody might take?

MS. DRAGONETTE:

You are saying that if the generator runs into regulatory opposition in the State, and the generator gets his trade group or sponsors a petition to NRC as an end run around State objection. Well, I guess that is conceivable.

MR. DUNKLEBERGER:

That is what I am questioning.

MS. DRAGONETTE:

Don, do you want to take over here?

MR. NUSSBAUMER:

I think the number of jurisdictions that have not adopted that is quite small, but we may have to re-evaluate that position.

MR. DUNKLEBERGER:

I think they are quite small, but some of the generators in these are very vocal and are very liable to do just that.

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MR. BROWN:

I am Holmes Brown. I worked with the States during the development of low-level waste legislation, and some issues were brought up in the discussion of the BRC rule, one of which was even if NRC were to declare certain materials BRC, it wouldn't necessarily comport with State law. I believe that Colorado currently has State regulations that don't permit the disposal of materials that are radioactive or at least they are very mildly radioactive, probably much below any of the standards that you might come up with, and it creates a problem. If you declare something BRC, there may be no place in Colorado that that material can go other than to the regional low-level waste site or if this is after a new site is developed in the Rocky Mountain region to that licensed facility, and the intent of the BRC rule was to eliminate some of the burdens on the precious disposal capacity, but you may run into State regulations that simply say that this stuff cannot go anyplace but the licensed low-level waste facility. That was an issue we discussed. We didn't come up with any resolution on it.

MR. NUSSBAUMER:

We may never get 100 implementations on this, but you know, hopefully the industry would work together to identify waste streams that they generate in common which are susceptible to this kind of treatment and generally satisfy the criteria that Kitty outlined, and it may be possible that the case is convincing that some of the States that have these kinds of stringent requirements might see fit to relax in this area for that purpose. Especially since they are now responsible for providing the disposal capacity, and if it is clear that a certain kind of waste which has a fairly high volume does not warrant disposal in a commercial disposal facility, then it may be to their best interest to take some action so that it can be disposed of in the manner that generically is permitted through out the rest of the country.

MS. DRAGONETTE:

One other point I might make is this -- I would see the rulemakings as providing an opportunity for generators, not a mandate that you must send it to a sanitary landfill. The rule would say that this is an acceptable way to do it. So, the generators would still have an option. I cannot imagine why they would want to pay for the other way, but the thing that would be a matter of compatibility then would be providing generators the opportunity, the choice.

Thank you for the insights. I appreciate it.

MR. NUSSBAUMER:

Were there any questions for Rob MacDougall? We kind of were into the break pretty fast after his presentation. Does anybody have anything they want to ask Rob before we move on?

MR. BROWNING:

I would like to specifically focus on the fact that he talked about mixed wastes. Aren't there any questions about mixed wastes?

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(No response.)

MR. BROWNING:

I think one of the key things in my mind and one of the key things we are working on with the EPA folks, is how do you define mixed waste. In testimony in the last round of hearings on mixed wastes, we referred to a study we had commissioned from Brookhaven National Lab. The lab tried to identify what is the population of low-level wastes that can also be categorized as mixed waste if you define mixed waste in its broadest terms, namely wastes that contain both radioactive materials under the Atomic Energy Act and have a component that would also classify it as hazardous under the RCRA legislation and rules. That study came up with the conclusion that the volume would be relatively small on the order of 3 percent of the total LLW volume. Some questions were raised and challenges made concerning the validity of the study. Several disposal site operators questioned the accuracy of the survey and suggested that it could be inaccurate from the standpoint that the people answering the questions didn't really know what the right answer was; the heart of the problem may be how do you define mixed waste. An example we have used to describe this very problem that a disposal site operator or generator might face goes as follows: Someone is cleaning up a radioactive spill, and the spill is just radioactive and has no other component associated with it. To facilitate cleaning they dampen the cloth with an industrial solvent that has a waste classified as a hazardous waste under RCRA. They clean up the radioactive spill and put the solvents soaked rag in with other rags in a drum. Is the result a mixed waste? Basically what we are trying to ask is, is there some concept of de minimis or below regulatory concern on the hazardous waste side similar to what we have on the radioactive waste site? This example is at the heart of trying to come up with the definition of mixed waste. At this stage we are working on it.

From the standpoint of a disposal site operator, it would be extremely difficult to know if a waste was mixed or not unless sampling was performed. Otherwise hazardous components might not be identified until detected through groundwater monitoring. Under EPA legislation, if there is any sign of a hazardous substance coming off a disposal unit, the facility is subject to closure until remedial action is taken. This is one of the fundamental issues we are trying to resolve in the technical staff interchange with EPA, and if that is not resolvable, I am not sure it makes too much sense to talk about mixed wastes because everybody has a different thing in mind. We may be talking about 3 percent of the total LLW volume. We may really be talking about 100 percent of the volume. So, it is an extremely important question. If anybody who deals with this on the State level has any insights that they can bring to bear, we would be more than willing to listen and are actively interested in getting your ideas. The other thing which would be of great importance to me, and maybe we don't have the right kinds of State people here, but if the States don't think that dual jurisdiction is a problem, I, for one, would recommend that we stop beating the mixed waste issue. We thought it would be a lot easier from a regulatory standpoint to deal with only one regulatory agency, but during the recent hearings, it has become obvious that there are other views;

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facilities should have to get dual permits. What is the big deal about dual permitting? We have been running some checks to find out how many of the reactor plan operators also have EPA permits. If they do, what is the big deal about dual jurisdiction? I think that is one reason why Congress is reluctant to get involved until the two agencies have made an honest attempt at trying to convince each other that dual permitting will not, in fact, work.

Any questions, comments or perceptions that you people have would be appreciated. I know there is a perception out there that the two agencies are playing games, and we have been fooling around with this issue for God knows how long. I am as frustrated as anybody on this matter. I feel like I keep shooting at a moving target, but we have, in fact, been trying to make an honest attempt to try to identify what the issues are and get them resolved. I think the documentation of the interchanges between the two staffs, which will be available soon, will demonstrate to you people that we have, in fact, been trying to resolve the discrepancies in a technically meaningful way. If not, I would like to hear about it.

MR. DORNSIFE:

Bill Dornsife, Pennsylvania. You know, Bob, I am obviously not that familiar with the RCRA rules, but on other issues that we have talked about some problems with radioactive material and RCRA rules, I think you might want to look at, if you haven't already, the small generator rule. That could eliminate a lot of the generators from requiring permits but not necessarily the treatment facilities.

MR. BROWNING:

A problem exists if you take advantage of that rule. Congress has asked EPA to, re-open the whole question as to whether it makes sense from their standpoint. If you have all the generators taking advantage of the rule, mixed waste may go to the disposal site, and it is perfectly legal. The disposal site monitors the groundwater and picks up contamination. The disposal site now is in jeopardy.

MR. DORNSIFE:

That is what I am saying. I am not sure how it applied to the treatment facility.

MR. BROWNING:

And if EPA's regulations apply, not only the disposal site is in jeopardy but the generators that sent the waste there are in jeopardy, I believe under CERCLA. It is a whole new ballgame when you have got dual jurisdiction and you learn about mixed wastes. If you are not experts in RCRA, you had better start becoming experts, because if you as a generator, and I am talking to the generators that might be here now, if you as a generator are sending stuff to the radiological site and are not identifying the hazardous component properly, you are in real trouble. You have got to identify it. The burden is on the generators

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to identify mixed waste, and I think if there is a perception abroad that you have been meeting NRC's requirements you are home free, you had better think again.

MR. DORNSIFE:

The other comment I would like to make is that obviously the problem with RCRA is how specific the RCRA disposal regulations are, and I am wondering how --

MR. BROWNING:

It isn't the regulations, it is the law.

MR. DORNSIFE:

I am wondering how NRC is pursuing the possibility of showing that some of these technologies we are pursuing are compatible, that they provide the same protection as RCRA. Are we looking at that as an option? Is that feasible?

MR. BROWNING:

Perhaps Dr. Knapp could explain in more detail the specific issues we are addressing. One is the definition of mixed waste. One is the siting requirements. One is the design requirements which basically gets down to the question of the double liner with the leachate monitoring and collection system.

Any others that I have missed? The processing and treatment of waste prior to disposal on land, the answer to this problem may be incineration. If, in fact, the waste is amenable to being combusted, probably that is what ought to be done, if you really are serious about meeting the RCRA regulations and meeting our requirements to reduce the hazardous component to the maximum extent practicable.

That is what the regulations are pointed to, and if the regulatory obstacles that are now being put in place will not allow incineration, you have really got an impossible situation to deal with from the standpoint of a waste generator. In addition disposal site operators aren't going to get any waste. Nothing will come. It will all back up or the facilities will shut down. They will have to stop generating waste unless use can all come to some conclusion about how to treat the waste. To the best of my knowledge, the EPA people certainly have nothing against incineration. In fact, they seem to be agreeing that incineration is the best way to deal with some of these wastes.

MR. TEDFORD:

Are you still accommodating questions here?

MR. BROWNING:

Sure.

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MR. TEDFORD:

Chuck Tedford, Arizona. You asked for suggestions with regard to the mixed wastes. In our area the majority of mixed wastes is in the form of scintillation vials. Do you have any feeling with regard to the overall mixed waste, what percentage of it is scintillation vials?

MR. BROWNING:

I don't happen to remember the number offhand.

DR. KNAPP:

It is about 2.4 percent, I believe, on a volume basis.

MR. TEDFORD:

Two point four out of the total three?

DR. KNAPP:

No, 2.4 percent of all low-level waste measured on a volume basis.

MR. TEDFORD:

And there is a total of 3 percent overall that he quoted. So, this is about 98-some odd percent of the 3% total?

DR. KNAPP:

Eighty percent or so. The rest of it is principally lead and chromate.

MR. TEDFORD:

Okay, and as I understand it, this is currently being incinerated. At least our scintillation vials are being incinerated by a contractor, and I would suggest that you consider taking that other 6/10 that you have left and maybe treating it in the form of greater than Class C wastes and handling it and spending some of the money that you have been back here debating with taking care of it in that area.

MR. BROWNING:

Your point is well taken. The liquid scintillation vial material, the largest volume of it, was decared below regulatory concern in the rulemaking that we went through. This opened up the doors for other options for dealing with it. The only reason the other portion of that waste did not get addressed is because the industry did not do what Kitty Dragonette was describing; lay out the cases for the nation in a particular waste category so that we could deal with them.

The fuel cycle division under Dick Cunningham is, in fact, working with the medical community to try to get the data necessary in order to decide whether that additional waste component is below regulatory

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concern. The problem is that people will not give up data because it is proprietary and has apparently some kind of business significance to it. They are trying to get over that hurdle.

One of the options we looked at was banning it from the radioactive waste sites. The problem, however, what is it you are banning? I mean how do you tell the generators what is a mixed waste we cannot answer that question by ourselves. We have to get EPA involved, and we are in the process of doing that, trying to get that question resolved. I am not sure we are going to be successful because they have restrictions and limitations placed on them by RCRA. They don't have the regulatory flexibility we have because their laws are so prescriptive.

MS. KIRNER:

Nancy Kirner from the State of Washington. I think you have answered your own question, and that is to go back to the drawing board with staff, argue between the two and figure out just what the law is really trying to say on both sides. That is basically what we are doing in the State of Washington. As you know, the site operator, US Ecology, has chosen to submit a Part B, Closure, Post-Closure Application. So, there is no acceptance of mixed waste, supposed to be no acceptance of mixed waste in the State of Washington, at least not that anyone is admitting to anyway.

There is a process going on in the State of Washington to deal with the issue of mixed waste. Basically we are trying to shuffle the two regulations, the State dangerous waste regulations and 10 CFR 61 license requirements.

After those two regulations are shuffled, and the real work gets done, then you stand back and say, "Does it make sense?" We may have just made a horse by committee and have it turn out to be a camel. The next option or the next step is to propose options for management to decide, and along with those options we have to decide can this be done; is this option able to be implemented by a variance procedure to the RCRA regulations or 10 CFR 61 or does it take legislative mandate? Until that process is complete, and that is going to take a long time, I think that we are just going to be batting our heads against the wall without complete information.

Thank you.

MR. BROWNING:

I might add here that after the NRC and EPA staffs have reached whatever agreement we can on the specific issues, I think it would be valuable for us to get together with the State people who have to deal with exactly the same question and make sure the State's perspectives are in agreement with our perspectives; that what we are coming up with is, in fact going to be able to work, be implemented.

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MR. FEIZOLLAHI:

Fred Feizollahi, Bechtel National, San Francisco. I guess you are now leaning toward a double agency permitting process, and I guess if you recall during the conference in Charleston this issue was discussed, and all generators, as well as the site operators said that they have no objection to double agency permitting. In fact, they may have five or 10 permits on their sites right now. The principal problem which I guess we forgot to mention here is that there are inconsistencies with the NRC and the RCRA regulations for disposal. So, being that that is the problem, how do you envision that these differences between the two regulations can be worked out in a way that there is no conflict?

As you know, the siting requirement of migration is different; the requirement of RCRA is zero migration, and under 10 CFR Part 61, we allow certain amounts of migration out of the site. So, there are some fundamental differences that have to be worked out before this double permitting can be approached. So, what is your answer to that?

MR. BROWNING:

I thought we had just described the process we were going under to identify what those differences are and see if they can be resolved at the technical staff level, but maybe we didn't make that clear enough. I would like to have Dr. Knapp who has the task of trying to resolve those discrepancies without the need for legislation tell you specifically what is going on. Incidently, I would encourage you not to put our requirements in the context of we allow leakage to occur. We sat through too many hearings where Congressional people say, "Gee, why should we allow NRC to license the site; they allow leaks? EPA doesn't allow leaks." What we do is recognize and acknowledge that over time, over the long periods of time that these sites are in existence, there will be some migration and as long as it is kept under control, the site will be acceptable. We don't initiate these sites deliberately designing and allowing leakage, and I encourage anybody who deals with this subject at whatever level that you try to make that distinction clear. All my technical experts tell me that EPA sites, no matter what, eventually experience migration, also. So, let us try to make sure that that misperception is clarified in whatever arena anybody has an opportunity to participate in.

DR. KNAPP:

With respect to some of the things we are working on right now with EPA, maybe this concept of zero release or no migration deserves just a moment. As we best understand it from EPA, th.r position is that no migration or zero release deals with untreated waste.

I believe their reading of the law is for as long as the waste shall remain hazardous, which for a number of chemical wastes would appear to be forever. The effect of this may be that there is going to be essentially no reasonable way to dispose of untreated wastes; chemically hazardous wastes. It will probably be necessary to conduct the incineration of organics and with respect to such things as leads and chromates it may be necessary to stabilize them into compounds which are basically insoluble, and then perhaps even beyond that mix them with

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something like concrete. I don't know that that is necessarily the position that EPA will take on hazardous wastes, but informally we get the impression that they are leaning in that direction.

If that is the way things come out, then the question of zero release may tend to resolve itself. This solution, however, does not resolve other technical issues such as dual liners, monitoring.

What we are doing in these areas is meeting with EPA. We have about 11 different subject areas and are conducting staff-to-staff meetings on each. Issues ... such as the definition of hazardous and therefore mixed wastes, site selection criteria, design criteria, criteria for monitoring, criteria for remediation are being discussed. The intent of these meetings is to go through the regulations very carefully and find out exactly what differences are tolerable and what differences amount to inconsistencies that would simply provide an insurmountable burden, if somebody wanted to get dual permitting.

Hopefully we can resolve these differences as we go and then get endorsement at the agency level. I think as Rob said earlier, so far in our meetings and discussion, we have not found any irreconciable differences, and that is the best that I can offer right now. I can tell you we are moving at a fairly rapid speed, and we are supposed to report to the Commission in about two weeks on our progress.

MR. NUSSBAUMER:

Anything else on mixed waste?

If not, we will move into the next topic on the agenda which concerns the NRC's Technical Assistance Program, and before I introduce our next speaker, Dr. John Starmer on this topic, I would just like to say a few words about the Technical Assistance Program as we see it from our Office of State Programs with the Agreement States.

As I am sure you know, there are 28 Agreement States now which regulate something on the order of 60 percent of the 20,000 material licensees, and this includes byproduct material, source material, less than critical quantities of special nuclear material, uranium milling and mill tailings and low-level waste disposal.

Now, the Agreement State Program consists of several basic elements. We negotiate new agreements as the States express interest. We review on a periodic basis, currently 12 to 18 months, each Agreement State radiation control program for its adequacy to protect public health and safety and compatibility with NRC's program. We exchange information on incidents, licenses, enforcement actions, regulations, guides and so on. Finally, we provided training and technical assistance to the States to help them maintain their high-quality programs.

The State Agreements professional staff are all health physicists with backgrounds in engineering, life sciences and experience in licensing and inspection activities. Most of the day-to-day assistance we provide to the Agreement States is provided directly by the State Agreement

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Staff which includes our regional representatives as well. Where technical disciplines are required which are beyond the Office of State Programs capabilities, such as in geochemistry or structural engineering, then the assistance is obtained from other NRC staff offices or contractors or anywhere else we can get the appropriate input. Now, in the case of low-level radioactive waste matters, we request the assistance mainly from the Division of Waste Management because of the evolving nature of the program and the technical expertise available in the engineering and earth sciences areas. Typically the State requests come to the Office of State Programs and are responded to by us with input from the other offices as needed.

On January 22, 1986, we wrote to all the States to highlight the availability of NRC technical assistance which is regulatory in nature, and we, also, wrote to representatives of the compacts and unsited States to explain the availability and limitation of our assistance to them.

We outlined the technical assistance in several areas which included guidance in assessing staff technical capability needs and overall staffing requirements for running the regulatory program for low-level waste; assistance in evaluating contractor capabilities and their proposals; assistance in evaluating disposal site license applications and environmental assessments and the assessment of performance of unique wastes in the disposal environment. This assistance would be provided to the Agreement State regulatory agency.

We do not, however, plan to provide technical assistance for developing regional waste management plans or designation of States to host new low-level waste disposal facilities or other activities which are beyond the safety regulation. I just wanted to make that brief introduction, and now, I will ask Dr. John Starmer to cover some of the types of technical assistance we have given and what we can offer.

John?

IV. NRC's Technical Assistance

DR. STARMER:

Since the time seems to have gotten away from me, I think my strategy, which I would say is just the opposite of Rob MacDougall's, is probably the best one to take. I would like to make a few important points and then get into some, if you will, boring details, at which point you can go to lunch early.

One point I would like to make is the concept that Don alluded to, that we provide technical assistance for regulatory-related concerns, and my last point will be that we can actually work with promoters, even to the level of talking to vendors. There may seem to be a little bit of a contradiction, but I think when I get through I may be able to explain how that comes out.

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We have two general tasks that we have been doing; one that we have called an outreach program, and I think in the group from the States, many of the you have been touched by that. That has been, if you will, one of the explaining what we can do for you. What I am doing right now might be an example of that, coming out and talking to particular States or compacts, explaining what our role can be, and we have and a lot of cooperation from State programs and particularly the regional people in that area.

The task I would like to discuss is that of being consultants to States; consultants in two areas. One is the area where we have special technical expertise. Being a geochemist, I know that geochemistry is an area where States probably cannot staff up. In addition, the work done by a geochemist in low-level waste may not be voluminous.

There are several approaches. You can go outside to a consultant, but very often a regulatory agency has regulatory questions. They would like, if you will, the parent agency, the NRC, to help them. You know, is this going to be a problem? Is this the way that the geochemistry would work, the way this licensee has proposed or whatever, and we can answer those sorts of questions.

In the Federal Register notice there were further types of help identified. For example a State manifest come in and ask; "Do we need a geochemist on our staff?" And we might consider and say, "We have one," and being a national organization, it is appropriate that we share resources. However, you should really have a geotechnical engineer and a geologist in addition to a manager and a HP and help you make sure that your staff would be ready to work in processing a license or offering help to your developmental agency or private concern that is doing development.

Another area that we work in is in offering explanations, or education about our regulations. This is a little bit different than the training that Don talked about. Training would be how to process a license application. Our education program is more concerned with what is meant by 10 CFR Part 61, paragraph 52. If you have a question, we can answer that. In fact, Kitty Dragonette has a standard sort of training session that we have given and will give to States. Last December, as an example, I went and talked to the technical advisory group for the State of Illinois, to explain the regulation, to go through the concept of performance objectives, to explain how the technical criteria support the performance objectives, and to discuss the sorts of things that would have to be done to license a site.

I have to point out that we have to do this within resource constraints. If we get to the point where we are overloaded, and we are probably close to the breaking point now with all the requirements of the Low-Level Radioactive Waste Policy Amendments Act, we might have to say no. We often can get someone from State programs or from the regional group to go and listen to the concerns, participate in a State meeting. We cannot always do that. So far, I believe there is only one case, that we have not been able to respond to requests from State Programs or through the liaison people in the regions, to provide staff from

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headquarters. So we are pretty responsive, but I would just say this is not a promise and we might have to say, sorry, could you put it off or could we make other arrangements.

Another important thing to point out is that we are trying to target the States that are making progress. We feel that if a State is just thinking about someday opening a disposal site, they have some problems, as you heard from Mr. Davis this morning. There are several States that are really trying to meet the deadlines to develop the disposal capacity mandated by Congress. We really owe our support to those States. We will encourage other States, but what we will encourage them to do is to get to work.

Excuse me, where is Texas? We also support go-it-alone States because they certainly are very serious about meeting the mandated deadlines. Now to the idea of what can we do in terms of development? The concept that was originated in their high level waste program, which was given a very flowery term, "early and ongoing consultation," is applicable to the LLW program. If we can get out and inform a State siting authority or developmental authority, talk to them, make sure that they understand our regulations, we can possibly head off at the pass at least the technical sorts of faux pas that could possibly happen. For example, somebody wants to build a disposal facility on silts in the Mississippi River flood plain -- we have a slight technical problem there. We would also suggest that there might be a perception problem. Of course this approach, concentrating on technical criteria, may not guarantee that there will be problems as Texas also well knows, for there are politics involved. We don't get too much into the State politics, but we certainly realize they are there.

Also at this point, I should emphasize that the regulatory agencies in the States, should talk to their developmental people and in the cases that I am familiar with, this is taking place. So it is no great problem.

Just to recap what was in the Federal Register notice, for Agreement States we can talk about staffing, and I explained the sorts of things we could do there. We can do evaluation of contractor proposals as we have done for the State of California. We can give assistance in licensee reviews, license reviews or environmental reviews. At least from my point of view, this does not mean that we will review the license for you, but we will help you review your license. I defer to Don on that, but I think it is a good point. If you want to be an Agreement State, you have to be able to evaluate your own license and run the site and regulate the site. We'll help. When I get into some specifics, you will see that we have been doing this for some time.

Another area that we probably have expertise in that we could not expect you to have are specific waste problems; below regulatory concern petitions for example; above Class C waste concerns. We have experience, we have people who really know a lot. So if a problem like those above arise, we can help, and at least for the active States, States with disposal capacity, we can assist in the review of specific, if you will, problem wastes.

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Now I would like to go through just a few examples:

My staff put together for me a notebook of some 40 pages of examples, covering approximately 20 States and tasks that we have done for compacts. I decided that rather than put you to sleep right before lunch, I am going to concentrate on a few examples. I am also going to talk in terms of development, what we can do in helping with development, talk some about operations because if you are all successful, you are going to be in the position of having to operate a site, and then talk about closure which seems like it is along way down the line but is a very current consideration for at least a couple of Agreement States.

I think I will start with Texas. It is one that I am familiar with and have followed for quite a while. It is, also, a case where we have worked with the developmental agency and with the regulatory agency. At least three years ago Texas came in and said, "We are going to 'go it alone,' and we are going to site our own facility. Could you give us some information on your siting requirements."

So, we talked at some length, explaining the criteria of Part 61 for siting and just helping them understand the regulations. They went off and developed siting criteria of their own, and we looked at them and said, "Those criteria are pretty good." They added a few things. Those were acceptable, no problem. They went out and found a site, and I think Tom is going to talk about that or may talk about some of the problems that you can get into, even though you have technically sound site. This case is an example of having worked with the low-level waste authority and the regulatory group to make sure that everything was going according to plan, and I think it has been very effective. Texas is now to look at some other sites we have had people involved. They have looked at the new site where they are doing site characterization. So, we are still actively participating.

Again, when we get a request, either directly or through State Programs, we try to respond and give information. At one time Texas came in with some specific design questions. What sorts of things can we or can we not do, and what would be compatible or not really compatible; what would be technically appropriate?

California provides a different example of what we can do. California, moved ahead and put out an RFP to develop a disposal facility. They looked at the very large bid documents and said,"Gee, I am not sure that we can really handle this sort of information," and so they said, "NRC, could you help us, first of all look at the contractor's qualifications, and then see if what they are proposing would meet Part 61 requirements?" I wasn't active in that effort, but I remember that it took several months of concerted effort looking at it, and an answer was sent back to California.

Illinois is a State which is active; they have developed their siting criteria; they are in the process of developing a facility. They haven't selected a site, but they have done some siting studies, and we

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are in the early stages of working with them as an agreement State and developing a new site.

As I mentioned, Bob Browning went out and talked to their compact and their development agency. I talked with them more specifically about Part 61 and about licensing alternatives, trying to explain, again in an educational mode, what sorts of things they were going to have to deal with in licensing and developing a site.

With Pennsylvania we are taking a different approach, and it is not one that I would say we could follow for all States, but we would certainly try to obtain the same level of participation. Pennsylvania has been in the process of developing siting and design criteria and passing legislation enabling them to develop and license a site. We were requested about a year ago, by the regional office to participate with their public coordinating committee as resource people. Again, it became an education and clarification role and we offered some of NRC's experience. "If you write it that way, have you covered all the requirements of Part 61?" So, our participation was to some extent technical, and there were people available to talk about how to set up screening criteria on a technical basis. "Have you met that minimum requirement? Have you gone way overboard?" We cannot decide this, but we can offer some suggestions." If you do that, you are not going to find a site in the State of Pennsylvania. It was an ongoing dialogue and for our staff, as well as for the Pennsylvania staff, I think it was a very useful experience.

We have done some other work. We have participated in explaining siting criteria to the State of Maine and others, but I think that I will leave it at that and talk very briefly about the operating sites and some of the things, that after you have got a site going, come into play. Maybe this will encourage you. You won't have to be so afraid. We will still be there. Again, we have to have expression of need, and based on that expression we will try to fulfill that need.

For the State of Washington, we have helped them over the past year bring their license up to speed with Part 61. It is not such a complicated thing, but it is time consuming. We had noted earlier some aspects of their license that were not up to speed, and here was a chance to try to implement Part 61 at the Hanford site.

The Barnwell site on the other hand, is pretty much self-sufficient. We do offer some help in reviewing specifics; special waste concerns. We do talk to them and certainly are available for consultation and assistance. In the past we went as far as helping them produce an environmental assessment at the request of State Programs.

The Beatty site hasn't been too active, although we have had some input into their closure and monitoring plans, and I expect that as the site becomes more active due to the Policy Amendments Act, we will be having more interaction with them.

Finally, a somewhat touchy point is that there are several sites still not operating, but they are not technically closed. In two agreement

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States, Kentucky and New York we have offered and provided technical assistance in reviewing closure plans and monitoring plans. Again, that activity varies.

MR. NUSSBAUMER:

Are there any questions on this aspect for Dr. Starmer?

MR. BROWNING:

One of the advantages to us is the interface we have with the State people, and this came very close to home when the Texas people first started an active dialogue with us on their experience, is that this is a two-way street. In addition to any help which the Federal agency can or cannot give to the States, we can benefit enormously by the State's experiences in trying to implement our regulation, and one of the points we made with the Texas folks, is that the 10 CFR 61 regulation is a new regulation. It hasn't been tested with experience and time. It was developed based on all the experience coming from the operating sites, including the DOE operating sites. We think we have learned all the lessons of the past and have incorporated provisions for making sure the problems at the existing and closed sites won't reoccur. It is very important to have a dialogue between ourselves and the States so that we can benefit from their experience in actually implementing the regulation.

I will have to say that I have been very pleased with the candor and the helpfulness; the Texas people take the time to come to tell us what problems they are having in implementing our regulation. Any regulation as you are probably aware, should be a living document. As you get more experience you may have to modify it and supplement it. That is also the reason why it is extremely important for us to be aware of what the existing sites are finding as they monitor the continued performance of their operations.

I don't know whether the State perspective is that our interface has been helpful to you or not, but I can tell you from my perspective, the interface is extremely helpful to us in terms of making sure that we are in a position to provide some kind of national focus to this particular problem. I encourage all of you to keep the open dialogue, even if you may not think it is a help to you. We certainly think it is a help to us.

MR. NUSSBAUMER:

Thank you, Bob. With that, we will break for lunch and reconvene at one-thirty.

(Thereupon, at 12:03 p.m., a recess was taken until 1:30 p.m., the same day.)

V. Agreement State Issues

AFTERNOON SESSION 1:30 P.M.

MR. NUSSBAUMER:

We thought it would be appropriate during this meeting to take the opportunity to discuss several Agreement State issues that have been raised. The ones we hear about most often are regulatory versus management responsibilities, the limited agreement option and training and State efforts to establish a capability to process applications for low-level waste disposal.

The original Radioactive Waste Policy Act of 1980, we felt left many questions unanswered and created a period of uncertainty for the States in attempting to meet their responsibility. One area of uncertainty was the emphasis of the compacts on management responsibilities. As the States began to form compacts in the early 1980's the compacts contained language that appeared to grant broad regulatory responsibility for aspects of low-level waste generation, such as treatment technology, volume reduction and some required inspections of each generator by the party State.

The Amendments Act of 1985, however, removed many of the uncertainties facing the States and the Compacts. The Act places specific limitations on compact authority so that it was clear in certain areas no new authority had been conferred upon any compact commission or State. The States or compact commissions do not have the authority to regulate the packaging or transportation of low-level radioactive waste in a manner inconsistent with regulations of the NRC or DOT, to regulate health, safety or environmental hazardous from by-product source and special nuclear materials, to inspect facilities of a licensee of the NRC, to inspect security areas or operations at the site of generation of any low-level radioactive waste by the Federal Government or to require indemnification beyond the provisions of the Price-Anderson Act.

Although the Policy Amendments Act did not grant any additional regulatory authority, an Agreement State does have regulatory authority over many of the areas that are of concern to those in the State of compact commission responsible for implementing the Act.

As I mentioned earlier, Section 274 of the Act was added to provide a State role in regulating nuclear material, and the statutory basis under which the Nuclear Regulatory Commission could discontinue, and the State could assume, through agreement, certain of the NRC's regulatory authority.

The agency within a State with regulatory safety responsibilities under an agreement must be separate from the agency whose responsibilities are for development and management of a low-level waste disposal facility. This is essential to avoid a real or appearance of a conflict of interest. We recognize that the Agreement State may have both proprietary responsibilities for the selection, ownership and operation or contracting for operation of the disposal facility and regulatory responsibilities for establishment of standards, licensing, inspection and enforcement of regulatory requirements.

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In order to avoid the possibility of conflict of interest between these proprietary and regulatory functions, it is important that the two different types of responsibilities not be assigned to the same State agency.

Another area that we are concerned about with respect to the Agreement States is that the tight deadlines and the pressures to develop new disposal capacity do not drive the regulatory review process to less than a complete in-depth review of the license application. The Agreement State regulatory agency has the responsibility to assure that the disposal facility meets the applicable regulatory requirements and that the public health and safety and environment will be protected.

Also, since the Policy Act Amendments sets up an allocation system with surcharges, there could be an economic incentive for storage, volume reduction and other treatment technology to reduce the amount of waste disposed of at commercial sites.

Although volume reduction and storage may be mandated by the compact or State, the actual regulation with regard to health and safety rests with the State regulatory agency or the NRC as the case may be.

Some States have already investigated storage options at utilities or centralized locations. Again, it is critical that the regulatory agencies maintain their independence from the agencies responsible for developing the disposal capacity so that their objectivity is not compromised.

The next area I will cover is the limited agreement option. Under the criteria we have developed for guidance of the States and the NRC in entering into an agreement, we provide for separate categories covering by-product material, source material, special nuclear material in quantities not sufficient to form a critical mass, mill tailings and low-level waste disposal. A State may, if it desires, seek authority for regulating only low-level waste disposal, without seeking authority for the other radioactive materials which are customarily included in agreements.

We refer to an agreement for transfer of regulatory authority only for such waste disposal as a limited agreement. Presently, there are 28 Agreement States of which 26 have the authority to regulate low-level waste disposal. Utah and Iowa's agreement did not include such authority, and these were the latest two Agreement States. The others were grandfathered in.

The basic elements of a Limited Agreement Program are quite similar to a full agreement. A State must establish authority to conduct a radiation control program for low-level waste disposal through legislation and be able to implement it through State regulations compatible with those of NRC. The State regulations will provide the standards and rules for licensing and regulating a low-level waste disposal facility. For example, radiation protection standards will be needed, such as Part 20 to cover operational aspects and maintain worker exposures, ALARA. Procedural rules will be needed related to hearing enforcement,

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environmental assessments, etc., and the location of the State radiation control program within the overall State organization should be such that it can effectively compete with other health and safety programs for budget and staff.

I would like to discuss some of the qualifications of the regulatory and inspection personnel for a Limited Agreement Program. In addition to persons qualified by training and experience to regulate the radiation protection aspects of the handling and use of the radioactive materials, the regulation of radioactive waste disposal requires capability in the fields of geology, hydrology, ecology, climatology, engineering and so on to evaluate the natural characteristics of the proposed disposal facility and the effectiveness of design and operational features to isolate and contain the waste. As a minimum, a State radiation control program should have on its staff or through consultants the capability to make independent technical analyses to determine that the established performance objectives will be met and to prepare environmental impact analyses of the proposed activity, and as we discussed before lunch in certain aspects of this, the NRC is able to provide technical assistance.

When an Agreement State plans to use consultants from other State agencies, universities or other sources, it is necessary that these persons be available when and to the extent needed. This availability should be assured by appropriate Memoranda of Understanding, consultant contracts and budgeted funds.

In using consultants, it is important to consider possible problems if the same person consults with both the Agreement State radiation control program and the State agency having the responsibility for selection and operation of the disposal site.

NRC has recognized this problem and has recently issued a notice of intent for th establishment and sponsorship of a Federally-funded research and development center for waste management. As far as the staff effort needed, NRC estimates that the professional staff time required for issuance of a license for a low-level waste disposal facility is about four staff years, for renewal of a license about two staff years and for a major amendment about one staff year.

The post-licensing activities related to existing waste burial facilities which includes resident inspectors conducting environmental monitoring at the site are estimated at about one to five staff years per site per year. Since no disposal sites have yet been licensed under Part 61 and not knowing the particular technology that might be used, these estimates should be considered somewhat speculative. The States should, also, have procedures to require that an adequate bond, surety or other financial arrangement be provided by the licensee to assure the completion of all requirements for decontamination, closure, decommissioning and reclamation of the site.

Also, sufficient funds need to be available to cover the costs of monitoring and long-term care of the facility by the State or Federal Government after operational and closure activities by the licensee are

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terminated. The State should, also, provide for public participation and hearings in the licensing process and should prepare a written environmental impact analysis and make it available to the public before commencement of any hearing on the impact of the disposal facility on the environment.

We are ready to assist any State interested in pursuing the limited agreement option or a full agreement for that matter. I believe it is important to emphasize that a limited agreement would be limited to authority over the low-level waste disposal facility. A State with limited authority would have no regulatory authority over the generators of low-level waste within the State. A full agreement would be necessary if the State wishes regulatory authority over waste generators, brokers or various waste processing technologies.

Additional information on the role of an Agreement State versus a non-Agreement State in regulating low-level waste can be found in the report we issued a short time ago, NUREG 0962, entitled "The Role of the States in the Regulation of Low-Level Radioactive Waste."

The final area I wish to touch on is the training and State efforts to establish a capacity to process license applications. As you know, Section 9 of the Low-Level Radioactive Waste Policy Amendments Act requires the regulatory agencies, either NRC or as appropriate the Agreement States to establish procedures and develop the technical capability for processing license applications by January 15, 1987. These procedures must, to the extent practicable provide for the completion of all processing and reviews, except for the licensing hearing within 15 months after receipt of the application. Prudence dictates that a regional host State or non-compact State, if an Agreement State, have the capability in place well ahead of that date, when applications are due. This is necessary so that pre-application guidance can be given to the applicant, such as site acceptability. We suggest that those Agreement States who anticipate becoming host States promptly begin to establish the necessary procedures and technical capability. During our periodic reviews of Agreement State Programs, we plan to examine those Agreement States who are host States or anticipate becoming a host State for the adequacy of their regulations, procedures, staffing and technical capability.

Several States have asked for assistance in training their staffs to enable them to develop a license review capability. As we discussed in the morning session, we are able to provide training and technical assistance to the States within budgetary restrictions to help them maintain their programs.

We presently offer courses in health physics, radiation engineering, licensing, inspection procedures, transportation, radiography and medical applications. At present we have no specific course for low-level waste disposal although certain aspects of the above courses have applicability to this area. However, we are at this time developing a project management course for processing a waste disposal application, and we hope to present this course in FY 1987. This course would cover the elements of processing and managing a low-level waste

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disposal license application which involves a multidiscipline review and careful timing. We are always pleased to provide information or answer questions about the Agreement State program.

Therefore, if there are any question at this point, I would be happy to have them.

Okay, if not -- apparently there is one.

MR. TRUBATCH:

Yes, there is. Hi, Don. You emphasized that the regulatory agency needs to be separate from the developing agency in an Agreement State. What happens in a situation where you have a State which is on the verge of becoming an agreement State which is engaging before it becomes an agreement State in both functions? We have one agency engaging in both functions. Is that State going to have to split the agency somehow in order to obtain agreement State status with respect to low-level waste?

MR. NUSSBAUMER:

That particular State we have already spoken to on this issue and have asked them to address that point in their proposal for an agreement. So it is a matter that we will have to take up with them.

MR. TRUBATCH:

Okay.

MR. TEDFORD:

Chuck Tedford, Arizona. Does NRC have hydrologist, climatologists, geologists, etc., who can help evaluate particular applications?

MR. NUSSBAUMER:

I believe we have most of those disciplines, and if we don't have them on our staff, we know where to find them.

Okay, the next session this afternoon will get into State and compact perspectives on things like siting activities, developing State regulatory capabilities and identification of needed NRC support, and we have a discussion panel consisting of to my left, Tom Blackburn, who is Director of Special Programs for the Texas Low-Level Waste Authority, Jay Dunkleberger who is Director of Technology Development Programs, New York State Energy Office and Bob Hallisey, Director of Radiation Control Program, Department of Health, State of Massachusetts.

VI. State/Compact Perspective

MR. BLACKBURN:

Thank you. Somebody once said that there are no such things as problems. There are only opportunities. In low-level waste, don't

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believe it. There are problems. We have had our share of them. I have a series of slides that I would like to show you about the siting effort that we have had in Texas, it shows what we consider a very excellent site in the western part of Texas, and several other things. The only problem is that is it sitting in Austin, Texas, right now.

The Texas Low-Level Radioactive Waste Disposal Authority is a separate State agency, separate from our health department. Our sole function is to develop a low-level radioactive waste disposal facility for the State of Texas. We will license our facility through our health department's Bureau of Radiation Control. We have the development and the regulatory agencies completely separate. We are governed by a six-member board of directors who are appointed by the Governor. Unfortunately, as in most of these type things, these are political appointments.

Our funding is essentially 100 percent from our general revenue fund within the State. We operate a little differently than most State agencies, in that we have to pay back whatever funds we expend in the 10 years that we foresee it will take to get a site in operation. We have 20 years in which to pay these funds back. So, basically, what we have is an interest-free loan from the legislature. We do go back to the legislature every two years and ask for more money. Our current budget covering the last two-year periods was approximately $3.1 million. We anticipate spending somewhere close to $20 million to get a site operating within the State of Texas. Again, we are a separate agency. We have a staff of 11 people, including four engineers, an attorney, myself, and several support people. This staffing level has been pretty well constant for the last almost four years. The Authority began operation in September 1982, with the fist employee hired. We first started our siting process in February 1983. We have been siting a low-level waste facility for three and one-half years now, and we foresee at least another year to go in our siting program.

In February 1983, we hired the engineering firm of Dames and Moore to survey all 254 counties within the State of Texas and come back to us with two or more potential low-level radioactive waste disposal sites. It sounded so easy back in 1983. We have a tremendously large State. Again, we have 254 counties. We have areas of the State where the population in the county is as low as 91 people. So, there are some pretty isolated areas of the State, but again, three and one-half years later, the siting process is by no means easy.

Several things have complicated our siting efforts. We don't have the power of eminent domain. We cannot condemn land. We have to purchase it as would a private individual. Another thing that has hampered our progress in Texas, and it could very well lap over into all other States is that our statute requires us to hold not only the surface rights to the property but also all of the mineral rights to the property. There are quite a few areas of the State of Texas where that just doesn't occur, and it is mostly because of the oil and gas in the area. These are probably our two biggest stumbling blocks.

To make a long story short, in February 1985, we had narrowed our search to two potential sites in South Texas. In January 1985, the Texas

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Legislature came into session. Our legislature meets every two years for 140 days. Every year there is a little bit of talk about trying to change it where they meet every 140 years for only two days.

(Laughter.)

MR. BLACKBURN:

So far there has been a lot of public support for that, but not too much legislative support. So, here we are in February 1985, with two sites, both of them located in South Texas, one of them 80 miles due south of San Antonio, the other 110 miles southeast of San Antonio. They both sit on top of a very solid clay deposit about 2000 feet deep. The aquifer in areas of both of the sites was in excess of 2000 feet deep. Surface water considerations-both of them were close to a river, approximately 12 miles and close to surface water reservoirs, approximately 15 miles away.

The legislature came into town and changed our enabling statute. Our statute lays out certain siting criteria. There are about 10 criterias that are laid out in our statute. To give you an example of how they are listed the Statute directs the authority to take into consideration A, geology. B, hydrology, C, meteorology, demographics, and it goes down with these one-word siting requirements.

Again, in February 1985, the legislature came to town, and they imposed another siting requirement on us. It stated that we could not site a facility located closer than 20 miles upstream of a surface water reservoir that supplies drinking water to any municipality within the State of Texas. So, here we had all these very, very general siting criteria that let us set the technical requirements and apply them equally across the State. Then we came in with a politically imposed siting requirement. As a result of this our two potential sites, both located within 15 miles of a surface water reservoir were automatically excluded.

The State of Texas owns about 3 million acres of land controlled by the University of Texas system or by the General Land Office. The legislation that changed in 1985, directed us to give preference to state-owned land and instructed the two agencies that control that land to cooperate with us in our efforts to evaluate State lands.

They had cooperated in the past to some extent, but not with open arms. So, basically in the spring of 1985, we began re-evaluating State-owned lands. Currently we have identified seven potential sites on State-owned land and have gone onto those sites and done quite a bit of site-specific work. We have narrowed the selection down to two potential siting areas.

Both siting areas are located in Hudspeth County in far West Texas. It lies about 60 miles east of El Paso. The county from east to west is approximately 65 miles wide and from north to south it is about approximately 75 miles. It has about 4550 square miles in it. It has a population of approximately 2300 people. There are three small

communities, the largest of which is approximately 495 people. It is predominantly an area of cattle ranching. When I say, "Cattle ranching in West Texas," you have to bear in mind that this means one unit or one heard of cattle on about 400 acres of land. At the southern siting area there is a couple who live approximately 3-½ miles to the west of the site. There is one small community of 200 people that is approximately 10 miles to the southwest. The site is located over approximately 400 feet of good clay. We did find water at 500 feet. The couple that lives in the area use bottled water. The site is State-owned land, and has no agricultural use. It has no mineral production. When you look at the siting process from our perspective, the lands that you are going to have to evaluate in your States, I think you will realize that is is going to be an uphill battle. It has been an interesting battle, but nevertheless, it is uphill.

What we foresee in the future is in December 1987, we will announce two potential sites. Basically the timing for this allows the legislature to have one more chance at us, one more shot at us, if you will. At the end of the next legislative session, assuming that there are no drastic changes to our statute, we will select a prime site, or the site that we propose to license. This will occur in June or July of next year. From that point on we go to our one-year site characterization and into our licensing process. We anticipate a site operating in the first part of 1992. As you can see, it is a very long process as was mentioned this morning.

A couple of things that we have done in the past, we have had a real good working relationship, not only with NRC but, also, with our licensing agency within the State. We have met on several occasions with NRC. They have been formal meetings, but they have been very informal. We would go in, sit down and say, "Look, what do you mean by this?" They would tell us, and they would ask questions about what we are doing, this type of thing. So, we did get an awful lot of good information out of it, and it seemed that the informal nature of the meetings helped a lot.

We are going to look to NRC, along with our Bureau of Radiation Control for a lot of help in the future. We are getting ready to come out with a design basis for our site performance characteristics, and we are going to go to NRC, EPA, a couple of State agencies, and a lot of other interested parties and say, "Basically, here is our document. Here is what we want out site to do. Now, do you think it is going to work this away? Is there anything that we can do to change that?" Another thing we would like to see out of NRC is, again, the statute that changes our direction, if you will, back in 1985, also, made another pretty drastic change. It told us that we could not dispose of low-level radioactive waste below the natural grade of the ground unless one of two things were done; one, statutorily it was made so we couldn't do it; and two, we could prove that a below-ground structure, is much better than aboveground structure. It appears to us that a lot of guidance is going to have to come out of the Federal establishment on forms of disposal other than standard shallow-land burial. We recently went through a technology assessment process, and this is really kind of interesting. Aboveground disposal has been talked about extensively in the State of

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Texas. People have a lot of faith in concrete. They have a lot of faith in engineered structures when they sit down and they talk one-to-one on it. They say that an aboveground structure is the way to go. Here you have got this massive concrete building. It is easy to monitor. If you have a leak, you can stop it fast. We brought together a panel of engineers, from our staff and from Rogers and Associates, and a couple of other engineers who were citizens in the State. We, also, brought together a 12-member citizen panel from Hudspeth County. We sat down with these folks, and we said, "Okay, let's list all of the issues that are important to you." The top issue was obviously the health of the general public. Second was the health of the worker. Then there were other things like inadvertent intrusion many years down the road and scavengers coming on the site at night, transportation, and other concerns.

We came up with 11 issues that were decided upon by the citizen group. Inside these 11 issues, each one of them had factors that contributed to the issue. So, it ended up we had 11 issues and about 36 factors. The engineering panel evaluated 11 different disposal technologies as to how they addressed each factor and issue. The result of this process was rather surprising. The first two technologies that stood out at the top were improved shallow land burial and shallow land burial, head and shoulders above any other technology that was rated.

Now, this was completely opposite to what the people had told us. When we asked "How do you think we should get rid of the waste?" They responded, "Anyplace but below the ground." However when they looked at it in segments of the relative important of different issues and factors whether they were really telling us was that they wanted a safe and economic way to do it, and shallow land burial came out as the best method available.

Again, to make a long story short, we have discarded shallow land burial. We have discarded improved shallow land burial, in spite of what this has shown us. We have selected three technologies that we are going to proceed with. We are going to develop general design documents for each technology than a very detailed design document on one technology. The three that we have chosen are below-ground vaults, aboveground vaults which incidentally rank No. 11 of all the technologies and a combination, if you will, of modular concrete canisters above and/or below ground.

I don't know the exact other happenings with this process that we just went through, but apparently this has been done three or four times in the past throughout the country with basically the same results. When you look at it in detail, shallow land burial meets the requirements, but when you look at it in reality, it is going to have to be something other than shallow land burial.

One other problem that we have run into that other areas of the Country may run into if their facility is operated as a State function as ours may be is that we have very few avenues to go into a community and offer that community any incentives. We can go in and say, "Look, folks, you know, we need to do this." Most people will agree to that. They always

say, "Yes, we understand you have to do it, just do it over there." We are just trying to find "over there" right now. So, there is not a whole lot we can offer. We can go in and say, "Here are 21 jobs we can give to the community." Even in these sparasely populated areas where there really are not jobs to keep people around, those 21 jobs don't mean much Unfortunately, we have no ability to make payment in lieu of taxes. What we are trying to do right now is to set up some type of incentive package for the county. The incentive package will basically be funded by the large waste generators in the State. We have four nuclear power plants under construction in Texas, and they will provide almost 90 percent of our waste stream, and basically it is just going to be laid on the line. Hudspeth County is 500 miles from the closest nuclear power plant, and yet the wastes from those power plants are going to go to a State-operated facility on State-owned land in their county and the people want something out of it.

Another thing we are trying to work out with folks in the area is to get them involved in some of the decision making for the disposal facility. We did it on the technology selection and have done it in the past on a few other things. We recently contracted with an organization in El Paso called the West Texas Council of Governments. They are sort of a clearinghouse for all the local governmental bodies in West Texas. They are setting up an oversight committee and establishing nine subcommittees to monitor our every activity. Everything from engineering to the geological and hydrological characteristics of the site. The main reason for this is that there has been a lot of concern of the local citizenry on the issue of waste disposal. They want to have a say in the process. We are trying our best to get sometype of community involvement, an actual community involvement, not just a good informational program, but we are trying to get them, again, involved in what we are doing.

I think I have covered everything. The only thing, again, it is a very long, tedious process, and it has got a lot of peaks and valleys. It has got a lot of valleys, I don't know about how many peaks. So, just good luck.

MR. DUNKLEBERGER:

When I was asked to speak here, a question was asked, "Where is New York?" It is a question I have been asked oh, at least six, eight, 10 times within the last week. About the easiest thing to say is it is located north of Pennsylvania, is a buffer between Pennsylvania and New England. The other thing that it reminds me of is a statement that a grandmother in our church told me a couple of years ago. Her granddaughter came up to her and said, "What is a Dunkleberger?" I guess both of those question, I don't have a very good answer for either one of them.

Right now speaking to where New York is relative to low-level waste, we are about the same place we were about one year ago. We have not satisfied the criteria for the July first date. At least we had not as of the time I left the office yesterday, and that is on a day-to-day basis for the next week, and we will have to see what happens. Governor

Cuomo submitted proposed legislation that had been picked up by the State assembly, and for those of you who don't know, Governor Cuomo is a Democrat, and the Assembly is run by the Democrats, and the Senate by the Republicans. So, that has a little bearing on what is happening.

The Assembly introduced the bill. It has gotten quite a bit of discussion, has gone through a couple of committees. There are two other bills that are tagging along with it, one of which would ban shallow land burial or disposal in the ground. The other one is a bill requiring a permit for transportation of low-level waste. So, those are following through in the Assembly. The Senate, after a lot of discussion and changes has amended the Governor's bill, has introduced its own version about a week and one-half or two weeks ago. It is basically the same bill. There are 20 or 30 different changes. One of the most significant has to do with interim funding, how the State would get money, what kind of fees it can charge during the time, say from now until the facility operates. The Assembly bill or the Governor's Program bill would allow fees to be assessed to generators. The Senate bill says, "No fees." You bond the whole thing or get it out of the State coffers and pay it all back within less than 20 years after it starts operating. So, it is a significant difference in concept of funding it. How significant that will be in the negotiation between the two houses I don't know.

One of the most significant issues is the issue on the transportation bill where it appears that the Assembly is insisting that it gets passed basically as a package with the low-level waste bill and the Senate is saying, "No way. We will treat that as a separate issue. Let us discuss it as a separate issue but not now. Let us take the low-level waste bill because that is the one we have to deal with right now."

It is at a situation that, as I say is day to day. Whether anything will get passed, I don't know. If it does, probably it will be Friday, Saturday, Sunday, that kind of a time frame, and we will be panicking on Monday trying to get everything out to the host States and let them know that we think we have met the date; we have met the milestone. You run into some problems there when you start looking at it. You know how long it took to get the Low Level Waste Policy Amendments Act or Act amendments, whichever way you want to call it, once it got passed to get it signed. You know how long it takes your own legislatures to do things and the Governor to sign them.

In New York the legislature has 30 days to get a bill to the Governor, and the Governor has 45 days to sign it, and the Policy Amendments Act requires the legislation be enacted, which means signed. So, even if the bill passes, today or yesterday, there is still a difficult process of trying to get it out of the legislature to the Governor, get it reviewed and get it signed by Monday. So, we have our work cut out for us.

I will give you a quick rundown. Some of you may have heard this before as to what the bill does and what the plans would be, and what I will be telling you are things that are pretty much consistent between the two versions, and I would not expect drastic changes in this.

The bill would be for New York State to develop a facility for itself. Whether there is eventually a compact with any other States is a question to be handled later. Nobody wants to jeopardize getting this bill and getting something going, getting some siting efforts going for the State because we recognize that New York will have to have a facility. We cannot anticipate that we would get a compact with another State, and they would take our waste because we probably would smother them with it, although there are a lot of States that generate more than us, and we will still have to have a site ourselves.

We would establish a siting commission. This would be a new commission. It does not exist at the present time. For that matter there is, in effect, no effort other than by myself on low-level waste at the present time in the State. Nobody is funded to do any work on low-level waste, and nobody has any directive to do anything on low-level waste.

The siting commission would be established, appointed by the Governor, five people, and it would have its own executive director and staff. They would be responsible for coming up with a disposal site and technology selection. They would recommend those to the Department of Environmental Conservation which is, as an Agreement State, the licensing agency in New York.

The Department of Environmental Conservation would certify that decision on technology and on the site or sites. From there once that certification comes into existence, the siting commission would go out of existence, and the energy research and development authority which is an existing State agency would take over the responsibility for taking that site and that technology through a license application which would, again, go through public hearings and determination by the Department of Environmental Conservation for issuance of a license. Then the energy research and development authority would actually operate the facility, construct it themselves or have it constructed and operated as a State-run facility.

Those are the basic provisions. As I say, the funding for it differs. Some of it is State funds. Some of it may or may not be fees to the generators while it is being constructed, depending on which bill or which provisions go through. Some of it would be provisions to use the surcharge rebates, if we meet the deadlines, and there would be some bonding, particularly of the facilities themselves, and those would have to be repaid within a period of 20 years. Technology has not been selected. All I can say at this time is that there is an extreme amount of opposition to shallow land burial. The bill itself calls for specifically addressing aboveground and deep mine disposal.

That brings us into a little problem because we really don't have a lot of the requirements for the deep mine disposal, and that is going to be an issue that is going to have to be looked at and going to have to be looked at within the next year or year and one-half, and I am not sure just where we are going to go with that one, but the legislature is requiring it.

Right now I know of at least two brokers, and there may be more who have already started collecting the surcharge penalties because anything that they ship would be shipped and received after July 1, and they are picking it up now. So, they are already charging those surcharge penalties which they will have to give back if we do end up meeting it. So, there is a lot interest in what we are doing. I cannot even find out from the legislature what they are doing or where it is, and I have been talking to them almost every day, and they don't know. I heard one assessment, saying that the Senate has about 100 percent chance of passing a bill and of getting the same bill, any bill through both houses is about 30 percent. That fellow tends to be a little bit of a pessimist, but I would say at this point in time whether we get a bill through before July 1, is a major question. If we don't get it through before July 1, in an election year, it could be very difficult getting it through by January 1, and then the next question is, assuming we do get it by July 1, trying to meet the July 1, milestone is going to be another difficult task, and that is not to speak of trying to meet all the other milestones.

Thank you.

MR. HALLISEY:

I would like Jay to know that there are many people in Massachusetts who wonder where New York is, also.

In Massachusetts back in 1981, we had the distinct honor of being the second largest generate of low-level waste in the country. In 1985, we moved down to step 5. I guess we didn't try harder. Back in 1981 and 1982, the Massachusetts Department of Public Health which I represent, the Radiation Control Program, through a grant from the Department of Energy through EG&G, attempted a consensus developing process in low-level waste management. It was approximately a two-year process involving industry, State agencies, environmentalist groups to look at the whole low-level waste management area and find out where Massachusetts is and what they should be doing about that particular aspect.

In late 1981, the legislature passed an act creating the Low-Level Waste Legislative Commission, and they took over the issue, gratefully from my point of view, of addressing the entire low-level waste management activities for the Commonwealth. Today I would like to talk mostly about the Low-Level Waste Commission, what it is and happily talk about our low-level waste siting bill which is before the legislature and hopefully will be passed this session, talk a little bit about a question that appeared on our latest State ballot which is called Chapter 503 of the Act which requires a voter certification for the siting of any nuclear power plant and, also, for any low-level waste disposal facility and, talk a little bit about where we are right now in terms of agreement State status with the Nuclear Regulatory Commission.

There are three principal agencies already in place in the State that have some involvement in low-level waste. These are, and certainly not in any order of importance, the Secretariat of the Office of

Environmental Affairs which has the oversight of all environmental aspects for the Commonwealth, and, also, the Under Secretary of Environmental Affairs, Lanny Johnson is the key person for the Governor in terms of negotiating with other States in the northeast area for compacts.

We still are actively pursuing a role in this area in terms of compacting in the Northeast. The second agency is the Department of Public Health which I represent. The Radiation Control Program in that department is the principal regulatory for all sources of radiation for the public health and safety within the Commonwealth. Our primary thrust, of course, is x-rays in the healing arts, but we have a very deep interest in the low-level waste management area. A third State agency is the Department of Environmental Quality Engineering which is sort of our State EPA, so that we have discussions with environmental quality engineering in terms of mixed waste, much as NRC and EPA have discussed this issue.

In terms of environmental aspects of disposal of any type of material, the Department of Environmental Quality Engineering is involved. The Massachusetts Special Legislative Commission on Low-Level Radioactive Waste was created by Chapter 738 of the Act in late 1981, to recommend the course of action that we should take in response to the Federal Low-Level Waste Act.

The Special Commission was charged with four major responsibilities. First, to make a recommendation on the establishment of a compact for the regional management of low-level waste; second, to prepare a statewide assessment report on low-level waste generation and management in the State; the third, to determine whether the Commonwealth should assume licensing and regulatory authority for radioactive materials by entering into an agreement with the NRC and the fourth to develop a comprehensive process for siting a facility for Massachusetts.

The Commission has addressed all four of these agenda items. In September 1984, after a year of concentrated effort, the Commission submitted the draft Massachusetts compact to the Governor for his use in negotiating with other States in the northeast area in an effort to establish a regional disposal facility.

In March 1985, the Commission submitted to the legislature a statewide assessment report approximately 600 pages on low-level radioactive waste management within the State.

The Commission, also, filed legislation for the 1985 session to enable the Governor to enter into an agreement with NRC to regulate at a minimum a low-level waste disposal facility should one be established in Massachusetts. Since the spring of 1984, the Commission has worked to develop a comprehensive legislative framework for the management of low-level radioactive waste generated in the State.

The legislative proposal which is called the Low-Level Radioactive Waste Management Act recommends a strong active State role in every phase of waste management beginning with the determination of need for the type

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and size of the disposal facility all the way through site selection, construction and operation of such a facility and finally to the approximately 100-year institutional control period.

The management act is a consensus document developed with the support of the full Commission membership. The Low-Level Management Act creates two new offices and calls for the involvement of established State agencies to provide for the safe management of low-level waste.

Parties named in the Act: The Management Board, the Department of Public Health, the Department of Environmental Quality Engineering and Community Supervisory Committees will work together with the public in a process carefully drafted to ensure the highest degree of protection of the public health and safety.

The Act is designed to enable the Commonwealth to draw upon the best technical resources available and provide for full accountability of participants at every stage in the process.

I would like to go through a brief description of the responsibilities of each of these components of major activities in the Act. The Management Board will coordinate the activities specified in the Act from plan-ing and the promulgation of regulations to the siting, operation closure, post-closure and maintenance and institutional control of any radioactive waste disposal facility.

As the lead office, the Management Board will be responsible for issuing a comprehensive management plan that includes an assessment of the waste management needs of Massachusetts.

The Management Board will be appointed by the Governor from nominations submitted by organizations with statewide membership. The Board which will consist of nine members will include members with professional training and experience in public administration, engineering, radiological health, business management and environmental protection. The Governor will, also, appoint the Secretary of Environmental Affairs or a designees of that office as an additional member of the Board and, also, a Secretary and Executive Officer or a designee.

Because of the divergence between, which Don alluded to earlier, the Department of Public Health being the regulatory agency, we will not have memberships on the Management Board. The Department of Public Health will serve as the licensing agent for any low-level waste facility in the Commonwealth. By entering into an agreement with the Nuclear Regulatory Commission, we will establish licensing criteria and inspect any Massachusetts facility to ensure that that facility is in full compliance with the terms of its license and regulation.

DPH is, also, charged with responsibility for enforcing the provisions of this Act. The Department of Environmental Quality Engineering is responsible for establishing the site selection criteria required by the Act and for regulating the Management Board's implementation for site selection.

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The fourth group, the Community Supervisory Committees, which are called the CSC's, will be established in any community that undergoes preliminary site characterization for the purpose of identifying a superior site. The CSC's participate in site evaluation and in setting the terms of operation, closure, post-closure and institutional control of that facility.

The site community CSC's will make the final selection of an operator and technology for the waste management facility. This is the final selection, and it is very important that the site communities will make this final selection; there is, also, an implication here, which I will talk to in a few minutes, about this referendum question, Chapter 503, in which a final voter approval of that final site selection could perhaps hinder the entire process.

The CSC membership will include the community's chief Executive Officer or designee, the Chairperson of the local Conservation Commission or a designee, the Chairperson of the local Board of Health, Planning Board and three residents of the community, approved by a majority vote of the City Council of the Board of Selection.

The last, but certainly not the least act in this Act is the general public. The Act encourages extensive public involvement in the waste management process and it structured to keep the public informed from the earliest planning stage to the institutional control of any facility after closure.

The Act calls for public meetings across the State through every phase of its implementation. These meetings will encourage the public to review and comment on guidelines, regulations and reports before their final adoption.

To encourage and facilitate public participation throughout the process, the Management Board will hire a public participation coordinator. The public participation coordinator will ensure that the public is informed of opportunities for involvement, that reports relative to waste management activities are widely available for public review and that ample notice is given for all public meetings in this process.

A brief summary of the Act itself: the Act is a coherent framework for cradle to grave management of all future low-level radioactive wastes generated within the State. The Act does not require that a facility be sited or specify where a facility may be sited if it is determined that one is needed. The Act does identify the major participants in future waste management and establishes baseline criteria and guidelines for their actions to guarantee the safest waste management practices available.

Because the process will govern waste management practices for hundreds of years, it requires clear, inflexible objectives for environmentally sound waste management and directs those responsible for implementing the Act to set specific regulations and practices appropriate to changing waste management needs.

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Through the Act, waste management is structured in six phases. The Act creates a management board and community supervisory committees, as I mentioned and, also, assigns specific responsibilities to the Department of Environmental Quality Engineering and the Department of Public Health.

The first phase is the planning phase, and it is perhaps the most important phase; during this phase the management board, DEQE and DPH will set the regulations and decision-making criteria that govern every subsequent action in implementing this Act.

No action towards site selection will begin until planning requirements are complete and adopted. The Management Board is responsible for the development of a management plan that will include identifying and classifying the waste to be handled, the kind of handling various wastes will need, analysis of available insurance protection and review of source and volume minimization practices of waste generators.

Based on this information projects of future waste generation and a review of management technologies, the management plan will then assist in determining whether a low-level waste facility is necessary and what capacity a facility must accommodate. The plan must, also, provide for interim management of waste until the facility is ready, as well as an emergency plan for facility closing.

The management board is, also, responsible for developing the basic technical, financial and stability criteria by which a facility operator will be chosen. DEQE, the Department of Environmental Quality Engineering's Responsibility during the planning phase is to develop criteria for environmental screening of the State for site selection and establishment of a resource center for ongoing data collection.

The Department of Public Health will develop the regulations for licensing, development, operation, closure, post-closure and institutional control on any low-level waste facility, if it is so sited.

DPH regulations will establish standards for safe operation, environmental monitoring, quality control and training support. The Department of Public Health may not license any landfill-type of waste management facility for Massachusetts low-level waste. The Management Act specifically prohibits what is commonly referred to as shallow land burial as a waste disposal technology for Massachusetts.

The Management Board, DEQE, and DPH will issue their draft regulations for public review and comment and hold at least six public meetings throughout the State. A public participation coordinator hired by the Management Board which I mentioned earlier, will be responsible for issuing the regulations and facilitating public response.

Only after the management plan and all regulations are adopted and advance notice has been given may the Management Board vote to begin site selection. The Management Act allows 15 months from the time of passing for this process to complete the planning functions. The second

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phase is site selection. The three major actors during the site selection are the Management Board, the Department of Environmental Quality Engineering and the community supervisory committees.

The Management Board will hire a consultant to assist with site selection. The first step in this process is to prepare a statewide mapping and screening report that identifies the area of the State that clearly will not satisfy the DEQE site selection criteria.

A second report on possible locations suitable for closer study will later be issued for public review, facilitated by the public participation coordinator and public meetings will be held in the vicinity of each possible location. The Management Board will then direct closer investigation of possible locations to identify between two and five candidate sites.

Again, a report will be issued and public meetings held in each candidate site. A community supervisory committee will be created in each candidate site community. The report on candidate sites will be submitted to the Secretary of Environmental Affairs for review by the Massachusetts Environmental Policy Act, our MEPA process which is conducted under review unit of the Office of Environmental Affairs.

If the Management Board accepts the report, it may then vote to proceed with a year-long detailed site characterization to examine candidate sites thoroughly in every season of the year.

When site selection begins, the Management Board will, also, conduct the first steps towards operator selection. Potential operators responding to an RFP will be investigated by the Attorney General's Office. After review of the Attorney General's report, the Management Board will certify those operators that meet the technical, financial and company stability criteria which have been established in the planning phase.

The potential operators and the CSC, the Community Supervisory Committees will work with the Management Board on the planning, execution, review of detailed site characterizations. A detailed site characterization report will be issued for public review and comment and public meetings held in candidate site communities. The report will, also, be submitted to the Secretary of Environmental Affairs at which time the MEPA unit will review the report for technical adequacy and compliance with site criteria.

After review of all comments and final acceptance of the detailed site characterization report, the Management Board may select the superior site by a two-thirds vote of its members.

The Act, also, provides that anyone aggrieved with the final site selection decision may petition the Commissioner of DEQE for an adjudicatory proceeding and, also, provides for subsequent appeal directly to the Supreme Judicial Court.

The third phase is the operator technology selection. During detailed site selection, the CSC's of each candidate community -- there can be

between two and five -- will interview certified operators. The certified applicants will be given the opportunity to revise their proposals to meet site and community needs.

After the superior site is selected, the CSC's of that community will choose the operator and technology for the site from among the previously certified operators. In the fourth phase, the facility approval and licensing, once the site-operator and technology have been chose, approval must be given by the Department of Public Health before the facility can be licensed and construction can begin. This, of course, assumes the Department of Public Health has already obtained agreement State status with the Nuclear Regulatory Commission. The Secretary of Environmental Affairs will require an environmental impact review of the proposed facility, and this review which gathers further information about the whole life cycle of the proposed facility will be conducted with substantial local participation and be open, as well, to general public scrutiny.

The Department of Public Health will decide whether to license any proposal, though not until after the Secretary of Environmental Affairs has accepted the final environmental impact report. The license will State all the requirements for the facility operation.

A draft license or denial will be issued for public comment. The Department of Public Health will hold meeting on the draft in the site community, and when issuing the final license or denial, DPH will, also, respond in writing to all comments received on its draft. I think you can see that there has been extensive public participation in the creation of this piece of legislation.

If the facility is licensed, the decision will go to the general court for certification and be voted on in the statewide referendum as required by Chapter 503 of the Acts of 1982.

This could then stop at this particular phase by the general vote turning down that particular facility, and you could go back to day one, but I have some good news at the very end on that.

Once the facility proposal is licensed, the Management Board and the operator will enter into an operating contract specifying the rights and responsibilities of each party. The fifth phase is facility operation. This phase sets the terms for facility operation which is overseen by the Management Board, the Department of Public Health as the regulatory and the CSC of the community in which the site is located.

Before construction can begin, DPH and the site community must, with a site operator, devise an environmental monitoring program for the site and the facility on it. This program, which is in addition to any monitoring DPH may do as the regulatory, will allow the community to assure itself independently that the facility is operating safely. Only after the vote or approval requirement is satisfied and baseline data is available may construction begin. The operator must, for each year it will receive wastes, proposed fees and waste acceptance criteria to the Management Board. The Management Board may accept or amend the

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operator's proposals. The criteria, to be based on the management plan adopted in the planning phase, shall govern which wastes the facility will accept and how they will be accepted.

The fees shall be set to cover all the facility's operating expenses including monitoring, as well as to supply funds that may be needed to remedy accidents involving persons or properties affected by the facility's malfunction.

The operator is, in the first place, financially responsible for any accidents, but there are several further layers of financial protection required by the Act, and the Commonwealth is the guarantor of last resorts for harm to persons or properties from the facility's operation.

The Act establishes a contingent liability trust fund for depositing investing surcharges collected by the operator. This fund cannot be used for any other purpose except to meet claims for harm to person, land or property, if all other sources of funds are exhausted.

The Act, also, establishes an institutional controlled trust fund for depositing and investing surcharges collected by the operator to be used once the facility passes from the operator to Management Board control for maintenance, monitoring, liability claims, cleanup and stabilization cost. At least one year before a facility ceases operation, the operator must submit a plan for closure to the Department of Public Health and to the Management Board, also, for review. If the plan is accepted by DPH and by a majority vote of the Management Board, DPH will inspect the operator's implementation of its plan. The operator will remain responsible for maintaining the facility according to DPH regulations for a minimum of five years after the facility closes.

The last phase is institutional control, the final phase, during which the Management Board assumes responsibility for the site for as long as necessary for the radioactive wastes at the site to decay to safe levels in accordance with State and Federal laws.

The cost of the institutional control period will be paid out of the institutional control trust fund collected during facility operation. The Management Board will not accept the facility license unless it determines that the operator has fulfilled all its responsibilities under the comprehensive operating contract. The Management Board must prepare its plan for the institutional control period and issue that plan for extensive public review and comment.

As you can see from this Act, it is approximately three years from the date of the enactment of the Act to actual site selection.

I mentioned earlier about the voter approval under Chapter 503, and last year the Supreme Judicial Court, at the request of the Senate of Massachusetts which is now reviewing this siting legislation, asked about the constitutionality of the referendum question, Chapter 503 for voter approval, and they determined, at that time on this particular aspect for the selection, the final selection of the site, the Chapter 503 would not be constitutional and that the Executive Board and the

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Management Board and the Executive Office should make the decision in that area.

Lastly, I wanted to say a couple of words about agreement State status as an individual who has worked 26-odd years in the radiation control area, spending 20 years with the Federal Government and coming over to the State of Massachusetts in 1980. I very much favored full agreement State status for the Commonwealth and have been actively pursuing that with a temporary delay by the low-level waste issue which has been a delay, perhaps, in a number of States. We are one of, I think, six States that doesn't even have enabling legislation on the books at the present time to allow us to enter into an agreement. There is separate agreement State legislation, in Massachusetts, which, like the siting legislation, has passed all committees, is in Ways and Means now looking at budgetary problems associated with it and should go through to the legislature this particular session.

Interestingly enough, in the beginning in the low-level waste area they talked about agreement at least to regulate a low-level waste disposal site. The Low-Level Waste Legislative Commission has since in its deliberations determined that they would like to see a full agreement for Massachusetts so that we can regulate the licensees in terms of volume and source reduction and other aspects of low-level waste management within the State.

Thank you.

MR. NUSSBAUMER:

Are there any questions for any of the three speakers?

MR. FEIZOLLAHI:

Fred Feizollahi, from Bechtel National, San Francisco. I had one question for Tom. You mentioned that you were looking at three alternative sites. I am sorry, three alternative technologies. Do you mean you were looking at pros and cons of three alternative technologies or --

MR. BLACKBURN:

We are developing a design document for the three technologies.

MR. FEIZOLLAHI:

Actually semiconceptual or detailed design?

MR. BLACKBURN:

Semiconceptual, if you will. We will take those, and our Board will look at those three technologies and determine which of those three is best suited for our site and then we will develop a detailed design document on that one.

MR. FEIZOLLAHI:

So, that will be pretty much costed and be completely evaluated. That is a very valuable document for the rest of the country.

I have just one comment on Bob's talk. You went through the site development process. Do you have document or a simpler version that identifies this process?

I tried to take notes, but it sounded such a toturous path. So, do you have anything simpler I could get from you later on today?

Mr. HALLISEY:

It is not anything simpler. The actual document here includes the legislation which is 49 pages. The Act itself is 49 pages double spaced, and a document was prepared by the Commission for the legislators helping them, hopefully, to help them to understand the legislation, and that is a background type document associated with this.

The assessment process itself was approximately 600 pages single spaced, which was prepared on an assessment of low-level waste in Massachusetts, and I think perhaps the only thing you can hope for is the proceedings will, at least, briefly mention each of the various aspects of the Act. It is a relatively cumbersome and complicated Act.

MR. FEIZOLLAHI:

I will try to see if I can get that.

MR. TEDFORD:

Chuck Tedford, Arizona. A quick question from Tom Blackburn, Texas. You indicated that based on a survey that you conducted that it turned out that shallow land burial was the best technology, period, but then you chose and indicated that you were going to go with above-ground vaults, below-ground vaults or you were going to go with a canister-type technology. Would you care to address a little bit or share your thoughts as to why you are going to do that?

MR. BLACKBURN:

I hate to say that we bent to political pressure, but we did. The Governor would like to see something other than below-ground shallow land burial, the legislative bodies that we talked to.

If you walk in and say, "Shallow land burial," they just turn you off completely. Again, there doesn't seem to be any technical basis behind it. It is just the public perception and the legislative perception about shallow land disposal, and we have even taken members of our legislature out to active disposal sites, and they walk away, just in awe. You know, they really cannot believe that it is run so well, and it is a nice, neat-looking operation, and it seems like there is a magic

line that when they cross back into the State, it is no longer good. There is no -- we have no legitimate reason for excluding shallow land disposal, other than the fact that we have been told that so many people don't want it.

MR. SALOMON:

I have a question for Tom Blackburn. My name is Steve Salomon with State Programs. I understand in Hudspeth County site selection one of the sites is fairly close to the Mexican border and then somehow you have to involve Mexico in some kind of environmental review. Would you please elaborate on that?

MR. BLACKBURN:

Yes, there is a treaty between the United States and Mexico that any environmentally sensitive endeavor within about a 50-mile buffer zone on either side of the border -- it doesn't have to be approved by the other country. You just more or less have to work with them and let them know what is going on. We work a little bit through the Environmental Protection Agency but mostly through the international boundary and water commission with Mexico to let them know basically what we are doing. We have offered to take them into the area and discuss all of our findings with them.

I might, also, point out though, on the other side of the border, in Juarez a low-level disposal site was developed southeast of Juarez very quickly. So, it is sort of reciprocal, I guess.

MR. SALOMON:

Do you view that as any kind of a stumbling block or impediment?

MR. BLACKBURN:

We don't think it is going to be a stumbling block. The document is worded so loosely, it is almost just keep us informed type if thing, but it has been brought up by a lot of local residents as something that needs to be looked into very closely, and the Mexican Government has raised some concerns over it, also. So, we are trying to deal with it as best we can.

MR. NUSSBAUMER:

Any other questions of panel members?

Okay, in that case, let us take a break for about 15 minutes until 3:15.

(Brief recess)

MR. NUSSBAUMER:

The next topic that we would like to address concerns the development of a State regulatory capability which as you recall is one of the

requirements of the Act, and then following that our concern regarding identification of needed NRC support.

Before I introduce the speakers, I would like to make a plea for the survey forms. Those of you who may have finished filling them out, please turn them in at the back table or if you haven't done so, at the end of the day at the latest. However, we would like them within the next hour if you could possibly do that.

The next speaker is Virgil Autry who is Director of the Division of Licensing and Compliance, the Bureau of Radiological Health, South Carolina.

Virgil?

MR. AUTRY:

Thank you, Don.

I was asked to speak about the development of the regulatory capabilities of States who will be involved with regulating low-level waste sites. I would first like to give you a little comparison of what it used to be and what it is today. Back in about 1968-69, South Carolina became an Agreement State. One of the primary reasons was to regulate a low-level waste site which was originally developed for the Southeast Region but now has become a national site. On a Friday afternoon about 1 o'clock, a company known as Chem Nuclear Systems brought by an application for a storage and disposal site and say that they would be back on Monday morning to pick up the license.

(Laughter).

MR. AUTRY:

At that time we had about two or three staff persons, one of them a secretary. A public hearing required by State law was held at the Barnwell County Courthouse. It was attended by about four or five people. Environmentalist groups involved wouldn't even come into the meeting. They stood out on the porch and sent messages in by courier to ask abut the requirements for siting. I have looked at the application which was formally submitted. It was stated that no waste would exceed 100 millirem per hour on contact. It would be basically trash, liquids, wood, some sealed sources, things of this nature.

There was no EIS performed, even though later on we did perform an environmental assessment of the site, and of course, it did take a little bit longer than from Friday afternoon until Monday morning to issue that license. In fact, it took about two years to issue that license. And now we hear today all the things that States are going through as far as all the law, the regulations, public participation, and environmental impact analysis. There are very large organizations within the Federal Government and State governments being set up to handled low-level wastes, and tremendous amounts of public participation. Of course, we have moved from the 10 to 100 millirem per

hour readings on drums, up to some wastes with as much as 50,000 R per hour. Basically we haven't moved very far as far as personnel. We have added people to our staff, but it doesn't take a whole contingency of person to do this. It takes dedicated people. Right now the State of South Carolina, the Division that I particularly supervise, is responsible for the Agreement State program. We have some 350 radioactive material licensees, the waste site being one of them.

We have three health physicist who handled the licensing and inspection of the majority of these facilities, and we have some rather large facilities in our State, other than the waste site.

Our Waste Regulatory Program is made up of three persons, one being a senior health physicist, the others being two engineers. The total experience among those people is five years, one being only six months. We have three persons dedicated to the inspection of waste shipments, and by the way, we do 100 percent inspections of all waste shipments that arrive at the Barnwell site. Not only do we inspect the shipments, but we, also, apply all regulatory enforcement action if we find any problems with them.

We, also, have support personnel in our laboratories, our environmental technicians who pick up samples and, also, the laboratory support chemists or radiochemists. We have received, annually, our NRC reviews, and NRC says that this number of persons is adequate.

Other responsibilities we have, of course, in low-level waste is the permitting of all generators of wastes who ship materials into our State. We also, receive advanced notifications of all waste shipments, as well as enforce the compliance of these particular requirements. We also review, topical reports with NRC's assistance (who does the basic review of all topical reports dealing with waste solidification, high-integrity containers and other aspects). Our group, also is involved daily in the site activities and the administrative requirements to deal with this low-level waste site. And now, the Waste Policy Amendments Act has added additional responsibilities on our staff which will have a tremendous effect on our workload.

Along with that, we have a large workload brought about by other States requesting tremendous amounts of information relating to our experience with low-level wastes and what has been delivered and disposed of on a State-by-State basis.

The Conference of Radiation Control Program Directors and its Low-Level Waste Committee, developed a NUREG document which we feel is ideal for what it takes to run a regulatory program as far as a low-level waste site. This document is available through the NRC. In fact, Richard Ratliff who is with us today is the one who developed or authored this thing with the help of the Committee members. It does give you some basic criteria for setting up a regulatory program, but, it doesn't answer all questions.

Don mentioned a while ago that you need hydrologists, geologist, and many other of disciplines to effectively assess a site and license one

of these facilities. We at that time, used outside help from other agencies. We have a very knowledgeable State geohydrology group, and they did assist us in numbers of these areas, plus the use of consultants in doing it. But we have had problems in our State with regulation of the particular site as far as personnel goes. I want to caution you as you develop these areas that you develop positions to handled these particular responsibilities and pay special attention to the type people you are getting. Try to pay these people to retain them. That is one of our biggest problems; the low salaries and high turnover of technically qualified people.

We are, as many Federal and State agencies, a training ground for industry and other agencies, too, and this is a very significant problem with us. We, also, recommend that you use technical assistance from NRC. We have relied on them for numbers of things, as I mentioned, such as the environmental assessment which we could not have done on our own. But they did provide this for us and, also, the review process of many of the technical aspects of the different types of wastes, solidification media and high integrity containers.

I would, also, recommend that you coordinate as closely as you can with the NRC when you get the capabilities and actually start regulating these sites. It is good to talk with them on a periodic basis as to what your thinking is and as to what theirs is, and we, also, recommend in these particular areas that NRC, as well as other State agencies who have the regulatory capability and jurisdiction, to do more at the waste generation sites; to look at the waste streams and to ensure that these persons are complying with the regulations.

Just briefly I want to mention some of the things that have happened in the State. Of course, the Policy Amendment Act; the State of South Carolina just passed their enabling or effectuating legislation to adopt the Low-Level Waste Policy Amendments Act. We are now busy looking at the milestones that will become effective July 1.

We are, also, very involved in the waste tracking and allocation process and along with the milestones, the State has set up an appeal process. If a State feels that they have met the milestones but the host States have indicated that they have not, there is an appeal process for this. The last legislation we have passed is, of course, adopt surcharges.

Any questions?

That is a brief summary. I don't want to go into too much detail on regulatory capabilities. I think it is up to each State individually to determine whether to use some basic guidelines provided either by us or the NRC.

MR. NUSSBAUMER:

Any questions for Virgil?

Okay, our next speaker is Richard Ratliff who is the Director of Compliance in the Texas Radiation Control Program.

MR. RATLIFF:

I am glad to be here this afternoon. It is kind of interesting that Virgil is talking about the staff that he has. I counted four or five people devoted to waste and at one of the sites that takes most of the wastes in the United States, and in Texas we don't have a site yet, but we have probably 15 or 20 people indirectly associated with the waste program, and it is primarily political and primarily out of need. The whole Low-Level Waste Policy Act reminds me of a story that a person from EPA told recently at this conference meeting about the politician and the bureaucrat who were in the hills near Washington out hiking, and they all of a sudden started looking across this ravine and saw the trees just rumbling over there, and so, they looked a little closer through their binoculars, and the politician said, "That is a grizzly bear." He said, "It is even worse news. That grizzly bear is coming towards us." So, the bureaucrat takes the binoculars, and he starts looking, and he says, "Sure enough; what are we going to do?" He looks down, and the politician has already taken his knapsack off his back and has one foot in one tennis shoe and is putting his other foot in the other tennis shoe. The bureaucrat being a technical-type person tells the politician, "You cannot outrun a grizzly bear." He says,"I don't have to. All I have got to do is outrun you."

(Laughter.)

MR. RATLIFF:

I think that is the situation we kind of get trapped in a lot of times. A lot of these laws are passed, and they they are dumped on us to come up with the solutions.

As Virgil mentioned, the Conference Task Force on Low-Level Waste did develop a NUREG document for the Nuclear Regulatory Commission. It is NUREG/CR-4352. I have about 10 copies of it here, and in this document we went through what we felt were the necessary requirements for a State program to regulate a low-level waste site. We went through the various stages of pre-operational, operational and then the long-term care and maintenance, and since I was the new person on the Committee at that time, I was given this responsibility, and so, it tracks pretty much what the Texas program has.

In Texas in 1979, the State found that we ended up with most of the liquid scintillation waste in the United States, after South Carolina stopped accepting liquid scintillation waste. We had a waste broker on Galveston Island who one year had 1000 drums of waste, and the next year on its inspection had over 16,000 drums. So, immediately it became a real political hot potato, Galveston Island being located right in a hurricane area, in a 100-year flood plain. It did not meet very many of the requirements you see in Part 61 right now, and the Governor told us as the hurricane season approached that if a hurricane hit Galveston Island and caused any problems that there would be a new radiation

control program in the State of Texas. Luckily that year the hurricanes went to Corpus Christi and Mexico, and so, we were spared.

By the time the next hurricane season came most of the waste was shipped out. It is ironic though of those 16,000 drums that were stored at Todd, most of them would now fall into the Biomedical Waste Act and could be disposed of as other than radioactive at a hazardous waste site.

In Texas that is what happened. There was a lot of pressure from the political and environmental groups about radioactive materials and radioactive waste in the late seventies. So, when the Texas Legislature met in 1980, they came to the program and asked us what do we need to regulate radiation in Texas, not just radioactive wastes, and they were also, being pressured from the standpoint that the uranium industry in Texas which at that point was the second-largest uranium-producing State in the United States, the uranium companies had a lot of lobbying going on, too, because they wanted Texas to, also, continue with an agreement to regulate uranium, and so the large companies, Exxon, Connoco, Chevron, Mobil, and you can almost name all the gas stations, and they have uranium facilities, also, also lobbied in our legislature, and so we did sit down, and we looked at what the workload was to license the radioactive materials licensees. We have over 2,000 licensees in Texas and 20,000 x-ray facilities, and based on that our program went from a program fo 30 people to about 130 people.

Most of the people were in areas where we thought we had been deficient over the years. With the 20,000 x-ray machines I had five x-ray inspectors, and if we got to each facility every 10 years, we were lucky, and we went back to a facility, if it was still there, it was always something had changed. Either the doctor had passed away or he had bought a new machine or changed, and so, we felt that we really needed the people, but since we did have a uranium program, it worked out real well. We needed the expertise in hydrology, geology, the ecologists, public information and attorneys to run the uranium program, and so it has worked out real well. We have this expertise in house. Our program is basically divided into three divisions, an Environmental Programs Division which contains the geologists, the hydrologists, the mechanical engineers who actually review licensee applications, and I think what will make it nice for a waste site is that they reviewed numerous uranium applications, both conventional uranium mills with large talings facilities and in situ facilities where we have had to concentrate extreme efforts into the groundwater protection, and so, they have written these environmental assessments. So, that group there, I think has been trained.

We have a second group. Our second division is our Division of Licensing, Registration and Standards, and this group; issues the licenses. They have a waste section in this group that does only waste licensing, and they do have experience, too, because we have three large waste brokers in Texas that are different than most waste brokers, in that they just don't take waste from a facility and then trans-ship it. They actually process the waste. They do shredding of vials, compaction. A lot of the liquid scintillation waste is then surveyed

and either sent to a hazardous site for incineration or Texas being one of the unique States, we have many deep injection wells where a lot of the hazardous chemicals from the petrochemical industry go, and so the liquid scintillation media, the toluene and the xylene are considered candy compared to the other chemicals that go in those deep injection wells. So, it has been a really easy way to get rid of those types of wastes.

The third program is the compliance and inspection program which I am in charge of, and up until this point we have had very little dealings with the radioactive waste authority group directly. It is mainly that they deal with our licensing group now. We do deal with our brokers a lot, usually through inspections and sometimes through court actions. It just happens that way.

We, also, found out though besides these groups that we really did, when we expanded our program need more public education, and so we have had a lot of effort with our waste authority and with other members of the community, especially environmental groups and the health physics societies to come up with educational and training materials, and we feel this has been very beneficial. I don't know that it will help at all when you try to site waste site, but I think at least the people will have some knowledge in the area.

We have, also, found that in regulating uranium and the waste area the technical knowledge is needed, but, also, you need the legal assistance, a lot more clerical assistance and one area that almost everybody forgets, accounting, because it really gets difficult when you ask for a 10k report from Exxon or Chevron for the uranium facility and you receive a document that big (indicating about 4 inches) and as a health physicist you have no idea what most of these things mean. So, you do need other expertise to regulate a low-level waste site.

The personnel that we have had, I think we have the same type of problem that Virgil has with turnover. We get people trained, and then it appears in most cases the people can go to industry and make a lot more money, and so, we have a good turnaround. I think what happens a lot of times though is that the people just get dissatisfied with State government. There seem to be a lot of pressures from both ends, the licensees pursing from one side and then the environmental groups from the other side lots of times feel like they are caught in the middle, but I think overall the program has been very successful.

Some of the things in Texas that have caused unique problems, too, our legislature when the created the low-level waste authority, also, put some restrictions in our law that make it a little more difficult. I think as everybody knows, our law does not allow any waste to come from out of State. It does, however, allow radioactive materials that were manufactured in Texas and then shipped to another State to be returned to Texas for disposal, and so our companies that manufacture industrial gauges or diagnostic test kits, americium sources for well logging, those materials can come back to Texas for disposal, and when it gets to the actual point of doing disposal, that may be an interesting situation on separating out what is Texas waste versus what is other waste, and

what happens to things that have been commingled after they have left the magic plain of the State borders. So, we will see what happens there. Another section in law requires us to inspect every generator once a waste site is in operation in Texas at the generator site before the shipment and then at the waste site, and if the waste site takes Texas waste only and the waste authority's estimates are correct, we think the site would probably be open may be once every two months or once a quarter. There is just not that much waste. So, from that regard, we will have to do a lot of coordination with utilities, the other licensees, the waste authority and ourselves to basically have a whole group of people doubling the population of those counties when there is going to be a waste shipment.

We, also, require that all the waste manifested in Texas -- I mean every bit of waste has to be manifested, whether it goes to a waste site or to a broker, and the copies of those manifest come to us. This is one difference that is different from the Part 61 regulations. I think it has been beneficial because we have been able to look at all the other streams and see where the waste is building up and if, in fact, our brokers are keeping adequate records. We have got a comparison there from the generator records to the broker records.

Current problems that I see in Texas that we have right now, I think everybody knows that Texas is primarily an oil revenue State, and so with the price of oil dropping down, even though I like the 70 cents a gallon that is in Texas, I liked it a lot better when it was $1.14 a gallon and our revenue was not in question. We do have a lot of problems with revenue at this point, and so, we are under a hiring freeze, and as you would expect, like in most States, we haven't had our engineers and our health physicists, the high-level positions leave. It has been our x-ray people who have left for jobs in other locations, and so we cannot rehire, and in reality, I think that causes a greater public health threat because the low-level waste is usually isolated from the public, whereas we all go and get our x-rays every year and feel more comfortable if the x-ray machine has been inspected and calibrated. Also, in Texas we were lucky or unlucky, whichever you want to consider it to be considered by Department of Energy for high-level waste site, and initially they had over three locations in Texas. They were looking at two up in the Panhandle and then one in the Salt Dome area in Central Texas, and they did pick one of the counties in the North Panhandle as one of the final three sites for the high-level waste. So, there are a lot of problems, I think, in that area, people confusing the high-level waste versus low-level waste, and the opposition really to both of them.

Fortunately for our group, I think the waste authority has more problems dealing with that than we do.

The final thing I have that I wanted to bring up is the waste streams that we have are so different than most of the States, without reactor waste, I don't think we would even need a waste site, and we have recently been petitioned by a group who has worked with the Texas Waste Authority to allow any radioactive material with half life less than 300 days at certain concentrations to be disposed of at a Class 1 sanitary

landfill. So, we will be looking at this petition and then I assume that we will have to, since it will be a change to our equivalent Part 20 regulation, notify NRC and have them rule on it.

So, I think there may be more of a de minimis coming down the tubes than people really realize. I will be willing to entertain any questions, also.

MR. NUSSBAUMER:

Thank you, Richard. Our next speaker will be Dr. John Starmer.

DR. STARMER:

I was asked to tell you a little about our licensing capability development program. In the process of thinking about it I, also, noticed that there is a topic here called identification of needed NRC support which I would emphasize is the real reason the Division of Waste Management is here. Tom said, "We would like some more guidance." I am going to get around to asking him specifically what guidance he wants, but first I want to discuss what we are doing.

The Policy Amendments Act places two requirements on the NRC regarding licensing capability. One of the requirements, says that we must be able to determine what is a complete application, and the other requirement says that we must have review capability to process a license within 15 months. Please don't ask me if these conditions transfer to a host State or someone else. I assume they do because most of the requirements of the Act do.

Our interpretation is that we have to have something that defines what a complete application is. As you know, the contents of an application are broadly defined in Part 61. However, for any applicant to successfully apply for a license, there has to be a lot more defined. An ongoing project is to develop what is known as the Standard Format and Content Guide for a license application. A similar document has been available (Reg. Guide 4.18) for environmental reviews, but there has been regulatory guide for an application. So, as a first step, we published in March a draft standard format and content guide for comment.

In order to demonstrate review capability, we could just say, "We are ready. Send us an application," and this might well satisfy the law. However, for our own confidence, we feel that we need to put down in writing what we will review, how we will review it and what criteria we will review against. In other words, we formulate standard review plans to review an application. Tomorrow we will talk more about SRPs when we discuss alternatives, but available to you now (in the back of the conference room) is an outline for the standard review plans. We did not expect so many public participants, so there are sign-up sheets to get mailed copies of this document. It might be of some interest.

Standard review plans are internal documents. They are, in fact, sometimes difficult for the public to get hold of, but nonetheless are

very important because they lay out how a review will be conducted, what analyses and what considerations will be given to various aspects of an application, and in general provide a set of design and acceptance criteria. What is acceptable? Each one of the outline headings on this document is a standard review plan, and each one has been assigned to a staff member. One person may have up to eight or 10 of these individual SRPs to write. It is not a small task.

The schedule is to have the complete SRP document in draft form by next January which is the mandated date. We are planning on a first internal draft, which will not be made available outside the agency, by the end of July. Up to this point we have managed to stay quite well on schedule, and I am very happy with the progress there. This SRP and SF and CG is not a selfish procedure. Both the standard format and content guide and the guidance on how to review documents will prove invaluable to States who are developing their own review program. Both documents provide, in black and white, how the review is to be conducted and the criteria against which judgments will be made.

There has been some discussion about what knowledge it takes to license a site. In response, I can say that the people we have asked to write specific review plans are doing so because of their technical expertise.

For agreement state programs we suggest that the license review staff include persons from your radiation control program, environmental scientists, geographers with environmental backgrounds, environmental engineers, geologists, surface water hydrologists, groundwater hydrologists, geotechnical engineers, materials engineers, health physicists, chemists, geochemists and finally accountant/management type person to nandle requirements for financial assurances that can get rather complicated.

We are developing a Standard Format and Content Guide. A draft has been published for comment. We received only two comments; we would have liked to have had more. The condition of the SF&CG at present is temporary. It eventually will have the same outlines the Standard Review Plan. We are reformatting and know we are going to have to add information requirements; you will find there are actually some blank spaces, the reason being that that document was formulated before and somewhat concurrent with the development of Part 61.

Another part of our strategy is to develop guidance and review plans assuming development of improved near surface, below-ground disposal. Note that I didn't say "Shallow land burial." The reason is that SLB is our base case, and what we plan to do, and I will talk more about this tomorrow under alternatives, is to identify, by January 1987, any alternative disposal method that are being considered by the States. Once we have done this, we can define additional standard review plans deemed necessary and request any needed information from an applicant. However, the bulk of the information that would be required, particularly for siting, is defined in the Federal Register notice Standard Format and Content Guide.

Our standard review plan preparation follows a similar strategy. Right now we are working on near-surface disposal information and reviews. We will add reviews of concrete walls and other engineered modifications that may be necessary based on the information that we get from the States in this meeting and in further discussion that we plan to have and one-on-one encounters that we hope to hold.

There are several further items to discuss. NRC is required to produce an EIS, if we license a low-level waste facility. The Environmental Impact Statement is based on the applicants submittal, of an environmental report which we are required to review and turn into a draft EIS first and then an final EIS after FRN and comment.

We are currently working on environmental review plans, but are somewhat behind schedule because many of the people who are doing the licensing review plans are also the people that are doing the environmental review plans on similar subjects.

My staff is also preparing a document which will define the review process. This is, for us, not necessarily a simple task. There are certain ordered steps that must be taken. There are specific times that are mandated between particular steps in the review process, and just outlining the entire procedure is a fairly lengthy task. We are working on it. We have prepared a flow chart and are now modifying it. The next step is to formulate a descriptive document.

This effort will not necessarily benefit the States. Obviously you will have your own review process if you haven't developed one, it might be helpful to get started. Certainly we have heared that Massachusetts has a very prescriptive review process and it might be some benefit to them to re-structure it after our review process.

Finally, something that is developing in parallel with those efforts described above is the assurance that we have the technical capability and tools to do any analyses, for example, hydrological modeling. Whether it be computer modeling or modeling with a hand calculator, we want to make sure that we have both the manpower and necessary technical expertise.

Now, I would like to hear something from the States on what they would like to hear from us. I don't know whether we could start and go down the table or we could get some volunteers, but I will either let Don chair this or I will stand up here for a while.

I hope someone takes some notes. I see there are not too many volunteers. Ah, there is one, an icebreaker. Thank you, Bill.

MR. DORNSIFE:

Something you mentioned earlier kind of caught my interest, and that is assistance you might provide in helping to review the requests for proposals for site operators. What specifically have you done for California, and what kind of help do you think you could provide in that area?

DR. STARMER:

Okay, I am sorry on that one, Bill. I can get back to you on it, the reason being, that was done before I took over this job. Is Ken Jackson here?

Ken, could you speak on that? It was done under your -- he is interested in our reviewing contractor proposals for site development, I guess, or design and operation , and I think specifically he is interested in what sorts of things we did for California and how that might work.

MR. JACKSON:

We did volunteer.

DR. STARMER:

Let me explain. Ken Jackson is my predecessor as Section Leader for Low-Level Waste.

MR. JACKSON:

Thanks. We did volunteer to do that on the request of California. It was a special case, and it was a hurry-up case, and they were interested in getting some information very quickly for the purpose of considering some people for potential operators for their site, and what we actually did was to just really go through the part of Part 61 that referred to the needs for the site itself, and Derek, do you remember precisely what section we addressed, 63, mostly, wasn't it? It was mostly just the qualifications. That was the question that was asked, and we did address that. I think we would still be prepared to do that, John. We, also, did something else for the State of Maine. We looked at a document that they came forth with for a potential licensing site for something in the Northeast. We, also, did a review for that. So, I think we have the ability to do that on request, assuming it doesn't get too burdensome.

DR. STARMER:

As you probably realize, we have been interacting with Pennsylvania in the area of siting and facility design in a general way.

MR. DORNSIFE:

I guess maybe to be more specific, like, for example, let us say we are reviewing, comparing technologies as part of this RFP review process, could you go so far as to use some of your models to help us compare the performance of those technologies? Is that a possibility?

DR. STARMER:

I would say that it would be a possibility. I think we would have to deal with it on a case-by-case basis. As I mentioned, you know, we are

here to help you as John Davis said. We are here in Washington to help you. Actually we are here from Silver Spring, but we do have to watch that we have certain responsibility, and you kind of have to get in line. My first impression is that it might be a very good exercise, in terms of comparing capabilities. I have a question for Tom Blackburn on that, but that seems to be something that really needs to be done. It is something that that Coordinating Committee which has sprung up, could address. Tom, could I ask you a question, please? I think that there are probably a lot of people who would be interested in the comparison that you did. Is that going to be made available publicly? Is that something that could be released?

MR. BLACKBURN:

You are talking about this thing that we did with the citizens group and the engineering group?

DR. STARMER:

Right.

MR. BLACKBURN:

We are in the process right now of getting together a final document on that. We have draft documents, but a lot of it is still in pretty preliminary stages, but once that information is completed, we will be more than happy to share it with whomever would like to see it. Again, it shows all the rankings. The rankings were done in several different ways, also. There was an overall ranking. There was another ranking that was done where the only things that we considered were safety issues where we got rid of costs. We got rid of perception. We got rid of whatever it might be and just looked at the safety issues and did a ranking that way, and then we did sort of a combination of all of it trying to weigh them as we felt that people were really interested. As soon as that document is available, we will announce it through normal channels. Usually the Radioactive Exchange picks it up and Nuclear Waste News, and we would be more than happy to share it with whomever wants it.

DR. STARMER:

I just thought I would bring that up because it was interesting to me. I thought it might be interesting to some other people.

It seems like there is a possibility that further review of contractor proposals might be of some interest. Again, that would be done on a case-by-case basis. It would come to Don's group or come through your State representative and make a request, and we will try to honor it.

We will get more into this tomorrow. I am particularly interested in any sort of guidance that you think you might need. I guess I don't want to pick on you, but one of the problems we have, we are sort of supposed to get our guidance on alternatives, and our feeling is that its great. What do you need guidance on? I invite anybody,

particularly from the States, seek out guidance. What sort of guidance do you feel would be most useful? Help us prioritize it, remembering that we aren't going to develop alternatives for you.

MR. TEDFORD:

Chuck Tedford, Arizona, I don't know what you are going to discuss tomorrow, but I, in particular, would like to know the costs per cubic foot, approximate costs per cubic foot of alternate disposal techniques, that is aboveground vault storage, below-ground vault storage, mine storage, the comparative advantages and disadvantages of each. I guess you are going to get into this tomorrow, but that is something I think we would be interested in the West.

DR. STARMER:

That is, I think, just the sort of guidance we probably wouldn't be able to produce because we have basically stated that we know what is cost effective and fully believe, based on many analyses that it protects the public health and safety, that is Part 61, near-surface disposal. I realize that there are a lot of people who don't believe that. I am not a developer. It must be a fascinating position to be in from what I have heard here.

Tom?

MR. BLACKBURN:

I think some of the things we are looking for are the finalization of these two documents which you are obviously working on, but then from a technical standpoint I know Rubin has talked to you before. We are interested in, aboveground structures, what seismic classification is it going to have to be built to, some real technical things, wind loadings. What are we going to have to build an aboveground structure to, if we have to go to one? Basically are we going to be held to the same requirements that we see South Texas and Commanche Peak having to conform to or is it going to be relaxed to some extent?

I think that is the type of thing we would like to see.

DR. STARMER:

Yes. I believe we answered that in the typical ambiguous way of a regulator when Rubin came up and talked to us, that basically it amounts to this, it depends on what credit you are going to take for the structure in terms of containment, intruder protection or whatever. If it doesn't matter if it blows down, then you could build it out of sticks and straw. If it really matters, then you had better go to brick or 10-feet thick reinforced concrete. Just a personal feeling is that if you look at the source term in a low-level waste site versus a source term that is contained in a reactor containment and think about it a little bit; I suspect that the criteria are not as stringent, just because of the source term involved.

MR. DORNSIFE:

Bill Dornsife, Pennsylvania. John, I said this before, and I say it again. We desperately need some guidance and if possible even a policy statement by NRC of what is long-term storage versus disposal? If you cannot give us a policy statement, at least give us some guidance on what kind of criteria you would use to evaluate either of those concepts, how they would differ? That may to some extent put the aboveground versus below-ground question to bed which is something we are all struggling with.

DR. STARMER:

I have some notes that I took this morning, and I would note that that question was answered.

MR. DORNSIFE:

Not to our satisfaction.

DR. STARMER:

If you want a policy statement, we do not have a policy statement. That is true. However, I think that if you look at it this way, if there is nothing -- if you put it somewhere, true waste, there is no reason to go back and get it. You don't expect to go back and get it; but you don't have any plans to because it is waste; there is no reason to go back and get it, it would be disposal. All right one type of disposal is that you put it in a drum; you kick if off the back of a truck, and you shovel some dirt on top of it. That is one type. A more sophisticated type is that you put it in a drum, and you carefully set the drum in; you plan to keep that drum dry. You keep water away from it; that is another type. Another type might be that you put it in a highly-engineered container with 10-feet thick concrete walls, but the point would be that what you are doing, you are not doing it so that you can go back in five years, 10 years or 50 years and take it and put it somewhere else because that is in your plan, all right?

Now, if you put it somewhere, and you say, "I am putting it here temporarily because I want it to decay or I want to see how the waste form behaves because I don't trust it," or whatever, but you fully intend to go back and get it and do something with it, I think you are dealing with storage, and there are some policy statements on storage.

Now, is there a Commission policy on that? No, but some common sense thought probably tells you where we would come out if we had a Commission policy. Do we need a Commission policy? I am not sure. We might want to discuss that with Bob Browning. I know that we probably need to formalize the thoughts that I just expressed in a more formal manner. I agree with you there.

The format that that formalization would take, I wouldn't want to commit to at this time.

MR. FEIZOLLAHI:

I guess in that same context --

DR. STARMER:

Identify yourself?

MR. FEIZOLLAHI:

Fred Feizollahi, Becktel National. Do you consider aboveground concrete to be a final disposal, considering that it is potentially in the way of some future highway or some other mandate intrusion that they would need the land or for another reason that you cannot basically leave it and go away from it?

DR. STARMER:

Do you mean like a vault?

MR. FEIZOLLAHI:

Aboveground concrete vault, yes.

DR. STARMER:

That is a potential disposal.

MR. FEIZOLLAHI:

Would you consider that as a potential --

DR. STARMER:

I wouldn't, personnally, no, but I see no reason to exclude it at this point. If it turns out it doesn't work very well apparently, it really would probably be better to put it below-ground, but --

MR. FEIZOLLAHI:

So, you are saying that aboveground vault can be considered as a final disposal according to NRC?

DR. STARMER:

It might be. I don't know.

MR. FEIZOLLAHI:

I guess this is the sort of question that was raised. Maybe you should identify what it is that you define as disposal and what is it you define as long-term storage?

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DR. STARMER:

I tried to explain that, and I don't think I am going to do it again, but if you don't intend to go back and get it, and you have met all the other criteria for disposal, I guess it is disposal. I, personally, have an impression that there are some of the criteria for disposal right now that might be hard for an aboveground naked structure to meet, but I am not convinced of that. I think that for anyone of these alternatives that is proposed, I think you have to look at the criteria, and I guess -- are there any criteria, any guidance on that? For example, if we got specific, now you have got exposed concrete walls, and you build it in an area where there is a lot of frost. Do you have any problems?

I come from Michigan, and I can show you bridge underpass abutments that are crumbling. Now, it may be that the concrete wasn't the correct concrete or whatever. Maybe there is a lot known today, but there are certainly some problems there. We have some documentation of what happens to concrete support structures during a severe fire. I don't tnink you would like the looks of it. There is not much left but the rebar. I think those are the types of analyses, you see that we are going to have to consider giving guidance on for anybody who wants to use concrete structures.

Now, in a way we are into discussing alternatives which is fine, but I think that it might be better to wait until tomorrow to get some perspectives that some of the State people and other people might have, including Bill. Those are the sort of things I think we would like to discuss. Where should we be going? Do you have a client who is interested in this sort of thing or you just are interested to see if you could design something? I guess my feeling is you can design something. I have seen a lot of things designed. You can probably build almost anything, given today's technology. Can society afford it? Is it worth it in terms of reducing the risk to the public or to an intruder?

MR. FEIZOLLAHI:

To answer your question, no, we don't have a client per se. It seems to me that we are going to discuss this matter tomorrow in greater detail. The question is how can NRC help at this point -- criteria to provide for definition of storage and disposal. I think at this point you can do some of those analyses that you just told me and come up and say, "We don't think aboveground vaults are going to meet our criteria for disposal." You just mentioned, it cracks and all those kinds of things. I think you are telling the people to come up and give you that criteria at this point. I hear the State people are asking you can you provide that kind of criteria.

DR. STARMER:

I would point out we have limited resources. I don't have enough people to put on an analysis of this. Now, we are going to do some contractual work. We have the contracts in the first stages of contracting in our

organization, but even there we may not have enough money to do all the work that would really be necessary to say, "No, you cannot," and the point here is that we have to review what the developer proposed to us. Somebody has to develop something and propose it to us. We can give guidance on these sorts of things. Some of it is pretty obvious, and we are going to try to do some of that, probably starting next January. Until then, if we can get a better idea, for example, if nobody is going to really seriously consider line augered holes, then maybe we don't want to spend a lot of effort on it. If everybody wants to go to aboveground buildings, then we had better think a lot about that, and I think that is another part of the information we would get.

MR. FEIZOLLAHI:

I don't think there is any compact that has the language for line-augered holes, but there are several compacts that are requiring aboveground concrete storage, including Massachusetts.

DR. STARMER:

No, you have put some words in the compact language.

MR. FEIZOLLAHI:

I think there are some States that require that specifically including Massachusetts. They require aboveground storage.

DR. STARMER:

That is something for, I think, the agreement State program to work with.

MR. DORNSIFE:

John, getting back to the thing of possible NRC assistance to States, I know EPA has a program. I think it is called IPA where they actually detail staff people to the States. Does NRC have that kind of program, and is that possible to implement to help us through a critical licensing stage, actual people that you can assign to our staff to work as part of our staff?

DR STARMER:

I don't know of it. I would leave that to Don, but I would temper any offers he makes by the fact that I don't have any staff to detail to you.

MR. BROWNING:

I think there is a program for exchange of people but it would have to be at the governmental level in a State governmental agency and NRC. I am particularly intrigued by the idea. I would like the flow to come the other way though. I would like to get some people who have State

regulatory experience on my staff, but it is certainly something that we could look at. I think we would both mutually benefit from it.

DR. STARMER:

You can send Rich down anytime you want to, all right?

MR. BROWNING:

We will add that to the list of things we will consider. I would like to pursue the question of storage versus disposal a little bit more to make sure I understand what really is bothering people. We thought we had tried to define the difference basically in the talk that I gave, and I believe it was, also, in one of the Federal Register notice documents that we put out. Apparently there is still some confusion or uncertainty. If we were to put out a policy statement, what is it more that we need to say than we have already said? That is what is bothering me. What is the remaining confusion factor? I mean, typically storage in the simplistic sense would be a warehouse on the surface that you move the drums into for some period of time, but you know that you are eventually going to have to move them out and quote, dispose of them.

MR. DORNSIFE:

I guess, Bob, maybe to try to answer that, in your own organization. If I understand it correctly, if it were submitted as a storage facility, it would go to somebody else for review. It would go the other side of the house, not necessarily John's group for review. If it were submitted as a disposal facility, it would go to John, and obviously the two would use totally different criteria to review that.

MR. BROWNING:

It would be under different regulations, right.

MR. DORNSIFE:

But there would be totally different criteria, and maybe there ought to be some guidance on how you make that determination of who is the cognizant group that does the review. What internal criteria would you use to make that decision? If you got an application and you didn't know what it was, how would you decide where to send it?

MR. BROWNING:

The application would have to say that it is for disposal or storage. If it is disposal, it would come to me. If it is storage it would either go to the reactor plant folks, if it is reactor plant storage or ultimately fuel cycle, but they would look at it. If they say, "Hey, really what this person is talking about," you are talking about what decision process we would go through if the applicant mislabeled his application.

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MR. DORNSIFE:

That is the kind of policy I think we need. Maybe that is the way to describe it. How would you internally, if you didn't know, from what is on the application, how would you decide whether it was long-term storage or disposal?

DR. STARMER:

Part of it would be how long you wanted to store it.

MR. DORNSIFE:

But supposing they said, "It is disposal," period.

MR. BROWNING:

I think I understand what you are saying. We will take a crack at it, if in fact, that would help resolve a point that is really bothering you at the State level.

MR. KRAFT:

If there is anything you can learn from reactor licensing, and I think maybe there is a lesson here. We were just talking in the back row. Look, if something is a Part 61 application, Bill, you are going to say so in the preamble or in the cover letter, and that is where it is going to go. There is an obligation, I think, on the part of the staff to look at the application and say, "Wait a minute. You may say that this is a Part 61 application, and it is subject to negotiation," because in the reactor world there are a lot of analogies where you say, the utility licensee comes in and says, "Hey, look, this is a Part 50.59 change. It doesn't need safety review and all these kinds of considerations." Our staff looks at it and says, "Wait, we disagree. We think there is an unresolved safety issue here and go back and do all that other stuff under these other sets of regulations," and that is where the difference comes in. I think the State, the potential licensee has to initially define under what -- you are asking for a license, whether it is 61 or anything else. Then the agency would say, "We think this is legitimate or not." That is part of what you buy off when you deal with a performance-based regulation as opposed to a prescriptive regulation, and we all wanted performance-based regulations in the first place because it seems to be a better way to regulate.

MR. BROWNING:

We basically have a dilemma. We wrote a performance-oriented specification with the minimum prescriptive requirements to ensure that some of the problems of the past would not be revisited on new

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generation sites. Now everybody is facing up to the typical problem of an applicant versus a regulatory. They say, "What is the best approach to arrive at that particular performance objective; give me a clue?" I think that is probably what you are facing up to right now. Is there some other process or mechanism that we could support that would accomplish what we are trying to look for which is hopefully standardization, so we can focus our limited resources on a limited number of approaches versus what we have right now which is, there are basically an infinite number of approaches to arrive at the overall performance approach. I think there is a perception that what is okay for a dry site would not be okay for a wet site. So, it sounds like if you have to cater to public perceptions rather than reality, perhaps one of the things is there ought to be at least two approaches, one for a wet site, one for a dry site. The thing we see happening is that everybody is being forced, whoever takes the most conservative approach, everybody else will be drawn along in the process, whether it is necessary or not, for instance the Texas situation. How many feet to groundwater did you say were on the first site?

MR. BLACKBURN:

Two thousand.

MR. BROWNING:

Two thousand feet to groundwater on clay that supposedly is impermeable. I think even our modelers would say that that probably would never get to groundwater, but even when you are faced with a situation like that, you are forced to go in a direction to, hopefully make it more conservative. The additional conservatism that you are paying for, is that the risk just doesn't warrant it in a typical cost/benefit kind of approach to the world.

We stand ready to try to figure out some mechanism that would accomplish both the States' desires to get something that they feel comfortable supporting at a State level and our desire to try to minimize the expenditure of resources. So, that we can really focus and make sure that the second generation of low-level waste disposal sites is, in fact, a net improvement. What I feared, and what I have said in the informal gatherings that I have been to at the State level is that one thing we have to make sure is that in the desire to go to something better than shallow land burial, and I think what people have in their mind's eye are the Maxey Flats and the West Valleys, not a 10 CFR 61 site. They refuse to acknowledge the two are different.

There is no 10 CFR 61 site today. It probably will never be given a chance to be born. Something else with some additional conservatism would come into play, but the thing we all have to do as responsible regulatory and state officials is to make sure that the next generation of disposal sites does not come on the line and lead to the same false expectations that apparently the first generation of disposal sites led to.

I have met with people, for example, who live around the Sheffield site in Illinois, and they tell me, "Yes, Browning, we hear you saying 10 CFR 61 would be okay, but the same kind of message came when we sited the Sheffield thing. People told us not to worry. Nothing will ever harm you," and then the next thing you know, the monitoring shows some movement off the site. Not to worry, it is not enough to bother you and the next thing you know, whoops, it is moving off the site in a different way. We cannot afford to revisit that kind of scenario with the second generation of sites where we bring something on the line, supposedly more conservative and then find what you have walked into is an entirely different set of problems because we didn't really focus enough time and resources to make sure we really knew what we were doing when we went to the next generation of disposal sites. That is why I think standardization is in the States' best interests and the nation's best interests, whereas I see what is going on. Apparently everybody is going at it slightly differently, and all our resources are going to get vectored away. Somebody wants to build an aboveground facility. Somebody else want to do this. Somebody else wants to do that. If we have to devote resources to trying to deal with all those kinds of approaches it is obvious it will dilute our efforts. How can we set up a process in addition to all the processes that you have to worry about at the State level that would facilitate that kind of an end result?

MR. DORNSIFE:

I think just one more thing I thought about that would be very helpful for us to have, and I don't think it exists right now, is some model to evaluate the performance of an advanced technology. You are saying that you are developing hydrogeological models that you can use for licensing. We are going to need a development of a model that we can use to verify the performance of a technology, too.

DR. STARMER:

But which technology.

MR. DORNSIFE:

Any technology.

DR. STARMER:

That is precisely the point that Bob was just making. Is that one of the problems? It is as if everybody wants a different technology, and we have to develop performance assessment capability for each one, we are going to be spread very thin.

MR. DORNSIFE:

But, John, as you know, as well as I do, the biggest question right now in developing a model that looks at performance of technologies is how do you model the engineered barrier? For example, how do you model a

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concrete barrier? There is very little known about that. That is the information that is needed to develop a model.

MR. BROWNING:

Basically what you are asking is how would the source term that you use in your release rate and groundwater release mechanisms, would vary for different technologies and different approaches?

DR. STARMER:

It is not even that simple because also, the potential pathways change, particularly if you go aboveground with potential release mechanisms.

MR. BROWNING:

This is where the questionnaire that we asked you folks to fill out, we are hoping that that will allow us and you to focus on what it is you are really looking for. Are you looking for zero release from the site? If you are, forget it. There never will be such a thing, no matter how much engineering you throw at the thing. So, that is going to be a problem if, infact, the expectation is zero release. Are you looking for some other concept? You know, don't worry about a design in the discussions we have tomorrow. Don't worry about getting augered holes or aboveground vault, but what performance characteristic would you like the facility to meet so that designer can start focusing on what the characteristics is you are really looking for. I am not sure I am getting my thought across. I think if we don't do that process first, you are going to have a situation that NRC is always accused of where people bring up somethin, and we say, "We don't like that rock. Bring us another rock," but we never tell them what shape the rock ought to be or how big it is. That is basically the exercise we are trying to do with you folks, see if we can define the rock that everybody is looking for and then see if the engineering companies, the Bechtels, the Chem Nuclear, no matter who, can make their best engineering talents to bear to try to design a facility that would meet those objectives. You are going to be stuck with the site. The site has to be a good site anyway, and I think what you are looking for and what your need is is some kind of an engineering concept that not only would look good but be good. What I am afraid of is it may look a lot better and people feel a lot more comfortable, but is it really going to make a difference in terms of the source term for releases off the site over long term? Any enlightenment you can give, we really are struggling to try to understand what it is that is required. I suspect the designers and everybody else also, have been coming up with approaches like the hexagonal concrete thing. Without knowing what your specifications are. It is hard to come up with a design to meet those specifications.

MR. SALOMON:

I understand that the Department of Energy in the next couple of years will be building three different low-level waste technologies at their

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Oak Ridge site, earth-mounded concrete bunkers, hillside gallery with canisters and gravel trench. Will the States and compacts somehow be able to take advantage of these demonstration technologies that the DOE envisions?

MR. BROWNING:

Given the timetables in the Act, it is not clear at all that they can afford to wait. Basically, we are only finding out how these existing low-level waste sites, operated 10, 15 years after the disposal was finished at the site. We are talking a long-term performance problem. So, I can sympathize with the State officials' problem of trying to explain to the public how this new site is going to perform over the long run. So, you know, they can lay out those concepts and go do them, but it is not clear that is really going to buy you very much in terms of understanding how it really performs over the long run. They won't know until 10 or 20 years, 30 years, 40 years, the end of the operation.

By operation, I mean after you dispose of the waste and it sits there, what is it really doing over the long term? That is when the real operation of the disposal site starts happening, not when you are emplacing your waste.

MR. SALOMON:

So, it would only be helpful from an operational point of view but not in terms of long-term performance?

MR. BROWNING:

I don't personally know what their timetables are or whether they really, in fact, are going to be able to do that. It may be something they are planning to do. I don't know whether somebody from DOE is here or not. They apparently just left.

Maybe we can ask that question tomorrow when we talk about the alternatives. If DOE could somehow come forward with a proposed approach that they think meets 10 CFR 61, plus additional conservatisms that are necessary to accommodate a wet site; we could work some arrangement with them. For example, where we could do a licensability review of that approach, since we don't license DOE, we cannot actually license some, but if we could work on some kind of cooperative arrangement where we could review it from a licensability standpoint. If that would help to have that approach sitting on the shelf, that might be a worthwhile effort to do. If one of the States would like to try to demonstrate, get up front, demonstrate a particular design by hiring somebody, having a competition, decide which of the competition wins and then having us brought in early to do a regulatory kind of review, we would be more than happy to try to work something like that out. I don't perceive the way the thing is going that what would necessarily satisfy Maine, for example, would satisfy Nevada or Texas, just like we issued a regulation which now nobody wants. Every time we do something they say, "That isn't good enough. I want something better." What we are trying to find out is what is it you want and need?

MR. DUNKLEBERGER:

Jay Dunkleberger from New York. To follow on with Bill's and actually the question of Tom Blackburn, too, what we are looking at are various technologies. A lot of them are takeoffs, if you will, on shallow-land burial or near-surface disposal, with adding various concepts. I would think the one thing that would be very helpful is if we could get some kind of a computer model which we could or you could or somebody could be able to plug in various intermediary stages of concrete or stainless steel or gold or whatever you want to think of as barriers. A piece of plastic here or 6-inch concrete or 10-inch concrete or these sure pack type canisters with something else around them or have various stages of protection that one could evaluate and plus in various concepts and see what it does actually to release rates. Thereby you would be able to have a little better technical handle on what you are really buying; what is it doing for you or what is it doing to you. I can see certain instances where what you are getting is, you may be benefiting yourself in one way, but you are getting into a West Valley situation, and you are creating a bathtub effect which we found out was not the right thing to do, but some of the technologies might end up doing that and hurting us. So, I think if something could be done along those lines where you can look at the various options, I think it would be helpful.

MR. BROWNING:

All right. We will take that into consideration.

So far we have heard that you would like to hear some more definitive guidance on storage versus disposal, and some kind of a modeling approach that would allow people to assess what the real benefit is to any additional barriers that might be imposed at the site.

Anything else?

MR. NUSSBAUMER:

Any other questions or comments? Okay, then we will adjourn for today and reconvene at 8:30 tomorrow morning.

(Thereupon at 4:48 p.m., a recess was taken until 8:30 a.m., the following day.)

Wednesday - June 25

OPENING REMARKS

MR. NUSSBAUMER:

This morning we have a panel discussion the licensing of alternative disposal methods, and we hope to have a good interchange this morning. We have some speakers lined up to lead things off.

The first speaker will be John Starmer from the NRC staff who we heard from yesterday, and then we will have Larry Pittiglio from the Division of Waste Management, James Morgan, Deputy Director of Legislative Public Affairs from the Department of Health and Welfare in California, Gail Nelson, Policy Analyst, Department of Nuclear Safety from Illinois and Bill Dornsife, Chief, Division of Nuclear Safety, Bureau of Radiation Protection in Pennsylvania.

John, do you want to lead off, please?

VII. Licensing of Alternative Disposal Methods

DR. STARMER:

I am going to very very brief this morning. I would just like to make a couple of quick points. As background, we were concerned, even when we promulgated rule 10 CFR Part 61, that there were other methods of disposal besides traditional shallow land burial that Part 61 was directed toward what could be viable. In fact, if you look in the statement of considerations, one of the commitments we made was to look into licensing of other disposal methods.

In line with that we had somework done for us by the Corps of Engineers which addressed five methodologies that were being practiced that were somewhat or entirely different than trench disposal. That was published last October. The bottom line there was that most of the technologies at that time, aboveground vault, below-ground vaults, what were called earth mounded concrete bunkers to give a generic name to the practice of the French and augered holes could be licensed under Part 61, with the exception of mined cavities which give some potentially unique problems.

Many of the Part 61 technical criteria would not be applicable. I would like to point out that our analysis of the situation is that the NRC process could, through cumbersome license mined cavity disposal using other regulations already in existence; Part 20, Part 30, Part 70, -- it would not be as straightforward as licensing under Part 61 for more classical types of disposal. It would be cumbersome but not impossible. I think you all should realize that the Sheffield site which is still licensed by NRC was licensed without Part 61, and one of the reasons for developing Part 61 was to streamline the licensing process. Any licensing we did for any of these would be very similar or exactly the same as that envisioned by the Part 61 process. Some of the requirements might be different, and it can be done on a case-by-case basis. The Corps of Engineers suggested, and we agree, that Part 61 can be applied to most things that are conceived of as disposal at this time.

In terms of providing some additional guidance, that is what we plan to do. As I mentioned yesterday, we are going to work on guidance for the base case near-surface burial. There are number of guidance documents available. Some of them are on the list in the back of the room and are available to you. What we plan to do in the future is to produce additional guidance, as needed, for engineered alternatives. We provided some general guidance in the form of a Federal Register notice;

a technical position on licensing of alternatives. As we begin to understand which alternatives you are interested in, we can determine what components are different from the types of things addressed in Part 61. Then we can add guidance on alternatives that can explain to you, A, the information that we will require, and B, the analyses we will do.

Now, I will let Larry carry on from here and tell you a little about our plans for the future with respect to alternatives.

MR. PITTIGLIO:

Good morning. What I would like to do briefly is discuss the Federal Register notice of our position on alternatives and to talk briefly about the responses that we have received to date. This will give you an idea about what we are doing and where we are going with the alternative program.

On March 6, of this year, we published in the Federal Register notice a draft technical position entitled "Licensing Alternative Methods of Disposal for Low-Level Radioactive Waste." Basically the position summarized the staff's work on alternatives for the last three years, including work with the Army Corps of Engineers which to evaluate the applicability of Part 61 to licensing of near-surface disposal concepts. In summary, the alternatives listed were the aboveground vaults, below-ground vaults, earth-mounded concrete bunkers, augered holes and mine cavities. The purpose was to identify what we considered to be the alternatives that are currently being considered and then to evaluate them. The results of the study clearly indicated that Part 61 is applicable to near-surface disposal and specifically addressed Subpart D, Section 61.50 which dealt with siting, 61.51 which basically dealt with design, 61.52, which dealt with operations and closure and 61.53 which dealt with monitoring.

The conclusion was that Part 61 is applicable for the near-surface disposal concepts. Mine cavities, as 61.23 John mentioned, is licensable under Part 61, specifically on a case-by-case basis, but is significantly different from current near-surface disposal, and by that we meant disposal in the upper 30 meters of the earth. Along with discussing the alternatives in the report, the Federal Register notice discussed the concepts of standardization which we talked about yesterday, as well as prelicensing consultation as a mechanism to expedite the licensing process. At the end of the Federal Register notice we presented four questions and requested responses to them.

Briefly the question No. 1 dealt with identification of any other alternatives that are currently being considered but have not been identified. Question No. 2 asked what areas of technical guidance do you feel you need additional direction. Question No. 3 dealt with standardization, and Question No.4 basically talked about prelicensing consultation. What I thought I would do now, again, is just briefly tell you the type of comments that we have received to date, noting that the 60-day comment period did close May 5, and as Bob Browning mentioned yesterday, we would still be interested in any comments that anybody would like to provide.

To date we have received approximately 13 responses to the Federal Register notice. Generally all the responses were favorable to the position, as far as the licensing of near-surface disposal. As far as the four questions, I think that is interesting enough to briefly summarize where we came out on those.

Question No. 1, generally the response was no, we do not know of any other alternatives, other than those mentioned in the report that are currently being considered. Question No. 2 was a varied answer as far as the specific type of guidance that you are looking for. Some people said that we need more general guidance. Others said, "We need more specific," but didn't say what they wanted. So, we do have a problem in that particular response in the fact that we were not able to get a definitive response to direct our program. Question No. 3 which dealt with standardization was generally well accepted. The responses that were received were supported standardization. It is probably more applicable to look at it on a regional basis or maybe by parts of the country or standardization of components. There was some concern that one design for all conditions may not be really amenable to the parties concerned.

Question No. 4 dealt with the prelicensing consultation, and that was generally well received, felt it was a good mechanism to help expedite the licensing process, and we received favorable feedback on that. So, that is where we are today. Again, we have received only 13 responses. I believe there are copies in the back. We encourage anybody, if you need a copy, get it and provide us some information. We are looking for feedback to that particular Federal Register notice.

As far as where we are going today, shortly after issuing the Federal Register notice, defining our position on alternatives, we noticed in the Federal Register the standard format and content guide for license application. Basically the guide provides a directory of the type of information that the NRC envisions will be necessary in a license application.

I think it was mentioned again yesterday that we received only one comment on that. I, personnally, found that a little disappointing because in the last two or three months before it was issued, I and a couple of other people went through several modifications to try to improve the document, and I can assure you that I personnally, think that the document is weak in certain areas. It is being revised, and it is important to get feedback from you, the potential applicant, to see if it clearly address to you what we envision we need in that license application? Copies of it are available in the back of the room, and we, again, encourage you to participate in review of that and provide us some direction.

At the same time that we were working on a standard format and content guide, we began the development of our standard review plan process.

There are outlines that are available for the standard review plans. Again, right now, we are currently working on the base case which is shallow land burial and will again, modify it to incorporate

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alternatives once we get through the base case. I believe that a draft will not be available until sometime in January of this year.

Again, the standard review plans are the mechanisms that evaluates the information that is presented in the standard format and content guide. It is the staff's approach of how we are going to evaluate a license application. I think that it will be another useful tool for you to see what we envision for the type of information necessary for you to demonstrate adequate protection of the safety of the public.

Also, at the same time, we are currently working our licensing assessment methodology document which basically will outline the steps in the licensing process, what NRC needs to complete in a 15-month period from the time that the application is docketed. At that time we will be conducting both our safety reviews and environmental reviews. We will have to go through certain iterations and then develop a policy statement at the end of the 15-month period.

That will be available later this year, I hope. I think that pretty much tells you where we are and what we are doing now, and if you have any questions we can address them.

Please feel free to ask us any questions.

MR. MCKINNEY:

Tom McKinney from Dames and Moore. I realize that you have stated that the mine cavity could be licensed kind of in a piece meal way under Part 61 and the other regulatory elements. With respect to site selection, however, all the other alternatives listed would fall under the Part 61 minimum technical requirements, and siting in that framework could be a Part 61 activity. Have you given any thought to the siting guidelines or components that would differ in a mine cavity situation? We are facing this as a significant potential alternative in the central interstate.

MR. PITTIGLIO:

At this time, I don't believe we have -- we have some information available that came through from the Army Corps reports that we are currently reviewing, but we have devoted our emphasis on studies and guidance related to the application of near surface disposal concepts, mainly the ones that are applicable to Part 61. I don't know what our resource commitment is and when and if we will be able to do that.

MR. MCKINNEY:

All right, thank you.

MR. PITTIGLIO:

What I thought, if there are no other questions, I might do is briefly summarize the results of a questionnaire (Appendix D) that we passed out yesterday, just to give you an idea of the type of feedback that came

out, if you are interested. Let me turn on the vugrapns, and I will present some of the results.

I thought I would put that slide up just to see if everybody was awake. We got 12 responses which is about 40 percent. I, personnally, was a little disappointed, but that is the statistics on that. Question No. 1 basically was a question that asked what positions the individuals were that responded to the questionnaire. The 12 individuals that responded basically held some type of position generally within a regulatory agency.

Question No. 2 basically addressed a question and answer, a list of several options about what are the most desirable additional attributes that you deem necessary for a disposal concept, and in the order of importance or ranking that we received, these were the three responses that we received. Early detection was the most important. Ease of remediation was second, and retrievability was the third option.

Question No. 3 basically dealt with the ranking of alternatives that you currently consider to be in the forefront. The earth-mounded concrete bunker was the No. 1 selection. Aboveground vaults was No. 2, and belowground vaults was No. 3. Question No. 4 was basically a repeat of the one that was listed in the Federal Register notice. Do you know of any alternatives that are currently being considered, other than the ones previously identified in our Federal Register notice? The response to that was no.

Again, Question No. 5 was just about a repeat again of the one in the Federal Register notice related to standardization of design, and the response was generally the same as we received. Standardization is good. We think it is probably more applicable on a regional basis, and, also, standardization of components may be another way to go. Question 6 was the one which was discussed briefly yesterday and dealt with what is your preference as far as dual regulation? The overall response was that individuals greatly favored single agency regulation rather than dual response.

A second part of Question 6 dealt with who regulates mixed waste, the radiological side. The response to that was either agreement States or NRC, and I believe there was another part to that question which basically dealt with the chemical hazard side of it, and the response was it was regulated by authorized States. So, that basically summarizes the information that we have. Let me just say one thing again in repeating what I know was said several times yesterday. It is very seldom that you will have an opportunity to comment on something and for once in your life maybe be incorporated. I know you get the feeling that you provide us a lot of direction sometimes and it is ignored, but we really do, in all honesty want your comments on both the format and content guide and the Federal Register notice.

It is a chance to really significantly affect what we are going to put out. So please get copies of it, if you don't already have a copy and provide us some input. You may never have a chance, again, to influence what we are doing as much as you do today.

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Thank you.

MR. MORGAN:

Good morning. My name is Jim Morgan. I am with the California Health and Welfare Agency, and most of my remarks have already been covered. So, I will try to keep these short. The State of California appreciates the efforts of the Nuclear Regulatory Commission in attempting to provide regulations and guidance in the field of low-level radioactive waste disposal alternatives. Since 1984, California has been active in the consideration of alternatives in waste processing and container enhancement. As early as 1982, the State proposed to the legislature a program of waste stabilization prior to interim waste storage. We recognized the need to stabilize what is now referred to as Type A and mixed waste prior to its being placed in a storage facility.

The solutions to the problem of container enhancement and waste stabilization are numerous, and each solution has specific or key elements. We have concerns in the areas of retrievability and minimum standards for waste form and container enhancement. Any final regulations or technical positions proposed by the NRC would, we expect, be discussed with th States prior to adoption, and I am getting the distinct impression that that is going to be the case.

Since 1983, California has had statutory authority to develop a low-level radioactive waste disposal site. It has a licensed designees, US Ecology and is well on its way to locating a site. As a matter of fact, this week public hearings are being held in communities that are the largest densely populated areas nearest to potential sites. The work plan calls for disposal operations to commence by 1991. There is no specific statutory language requiring enhanced technology. However, it has been determined that the Department of Health Services which is California's lead agency for low-level radioactive waste disposal, has the authority to adopt regulations requiring alternative technology, and the underlying regulations are now being developed. We have not developed specific requirements for alternatives or enhancements to shallow land burial or as we euphemistically refer to it in California, kick and roll. Whether or not alternative technologies are eventually required will depend upon the scientific advantages, the geotechnical profile of the site itself and the cost effectiveness of the system. The State has benefited from the submission of proposals from potential license designees by having an in-depth view into some of the alternatives, and the alternatives which were available for consideration include below-ground vaults, patented concrete containers of specific design, such as the Westinghouse Sure Pack, concrete boxes with waste grouted in place, such as the Pacific Nuclear process and other systems which may be developed, such as those discussed yesterday.

Contrary to some of the sterotypical images of California, we have no intentions of putting the low-level waste in hot tubs in Malibu.

Any alternatives must be judged against criteria which are specific for California's conditions, and these criteria include the volume of waste. California is expected to produce 200,000 cubic feet of waste in 1986.

The location. California has extensive desert areas which have an average rainfall of less than 10 inches. This situation reduces the likelihood of precipition reaching that waste. Evaporation in this climate far exceeds those 10 inches of precipitation per year.

The stability of the cap over the waste after operations. This commences upon acceptance of the site for institutional care by the State following its useful life for disposal and, the retrievability of the waste package; the State recognizes the importance of being able to take action at some future date, as new systems develop and become cost effective. Key there, becoming cost effective. We, also, see the need to evaluate possible alternatives as they relate to waste processing. Waste stabilization is highly desirable. A stable waste form provides a product which will not degrade and result in costly maintenance of the site after its operations.

Methods include compaction, using high-force compactors, incineration, glassification, mixing and encasing the waste in glass and acid digestion, (and please don't ask me for specifics on those because I have no idea) and there are others.

We encourage the Nuclear Regulatory Commission and other governmental agencies to continue their efforts to find solutions to the problems of mixed waste, and we would urge the Federal Government to avoid the morass of dual EPA-NRC regulatory authority.

Thank you.

MR. NUSSBAUMER:

Any questions for Mr. Morgan?

DR. STARMER:

I have a point of clarification. You said that you might require more than shallow-land burial, and then you said that you equate that with kick and roll. What I would like to ask is do you equate kick and roll with Part 61 disposal?

MR. MORGAN:

Yes.

DR. STARMER:

If you practiced kick and roll in the classical sense, you would be in violation of our regulations.

MR. MORGAN:

Is there a police officer in here? I can go now.

DR. STARMER:

No, let me explain. I want to use this as an illustration. Part 61 requires a great deal more care in placement of waste, backfilling of waste, waste form and container requirements than was never required by what we considered classical shallow land burial. Yesterday you may have noticed that I used a very long euphemism for shallow land burial, calling it near surface trench disposal, with some engineering enhancements, and I guess the question I have is, you know, your perception obviously is one that Part 61 allows classical kick and roll like at Sheffield or West Valley or Maxey Flats, in other words, the classical thing. Have you observed, for example, the operation at Barnwell which is an attempt, if you will, to backfit or to implement Part 61 type of disposal at a currently operating site?

MR. MORGAN:

Yes, we have, and let me apologize for being flip about this. We did -- I was not personally involved, but the State of California did an extensive review of Barnwell, the Washington site and in Beatty (Nevada) and we were extremely impressed by what we saw there, and there is a reason for that. I don't know how many of you are familiar with some of the machinations that have been going on in the State of California with respect both to compacts and to a licensed designee process. If I may take a couple of moments, I will try to backfill some of this information.

First of all, we had a process that we let out an RFP for licensed designee. We had four organizations submit, and as was indicated yesterday, thanks to the Nuclear Regulatory Commission, we had all four of those FP's reviewed, and we came up with a selection of a designee that incorporated the SUR PAC method, the folks from Westinghouse. Westinghouse subsequently withdrew. We then re-opened the entire process. The State of California was then sued by another applicant. The judge in the suit allowed us to go to one of the other applicants rather than re-open the whole process of we were going for what we called the enhanced technology.

The judge referred to 10 CFR 61 as the only technology you need to go with or the only parameters you need to go with. All four applications were within the guidelines as the NRC had said. All four were within the guidelines of 10 CFR 61, so that we then embarked on a re-review of the three remaining applicants, all three of which, as I say, fell within the guidelines, and then our Director of the Department of Health Services went for on-site visits to all three of the sites, and determined that yes, in fact, the NRC was correct. For sufficient protection of the public health, shallow land burial was more than adequate.

Does that answer your question? I used that very flippantly, and I apologize. The other euphemistic term we use is box and bury. Do you want to hit me on that one?

DR. STARMER:

No, not at all.

(Laughter.)

MR. MEYER:

My name is Lou Meyer. I am with the Environmental Protection Agency. We are developing environmental standards for low-level radioactive waste disposal. We have evaluated 10 different types of disposal methods, alternatives, if you will, and we have found that 10 CFR 61 is different and much better than shallow land disposal, kick and roll. We do not equate that as the same thing, and we think that anyone who is even -- this is a personal thing. I would say that anyone who is even being flip about it in such a controversial area, it is something that is inflammatory. I think that is a mistake. 10 CFR 61 seems in our preliminary analyses to give quite adequate protection of the public health, and our preliminary analyses, also, indicate that if you go for some of your enhanced methods you may be wasting money. We have to develop our standards under looking at costs and benefits, and we cannot really justify anything more stringent than 10 CFR 61, I don't think. That is just a preliminary evaluation. So, I give this for your guidance.

MR. MORGAN:

Were you here yesterday, sir?

MR. MEYER:

Yes.

Mr. MORGAN:

Were you present when a gentleman discussed, I believe, from Texas the survey that Texas went through and was then subjected to the politics of enhanced technology?

MR. MEYER:

Okay.

MR. MORGAN:

Regardless of whether or not it is cost effective, regardless of whether or not 10 CFR 61 is adequate to protect the public health, I think it would be naive to deal with this whole issue and not take into consideration politics. Anyone who suggests that is not hitting on all eight cylinders, as far as I am concerned. As I said, I used the term flippantly, but I, also, acknowledge, and the State of California acknowledges that 10 CFR is more than adequate to protect the public health, and I appreciate your guidance.

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MR. MEYER:

Okay, it is something I wanted to bring up today at an appropriate time. Maybe this is appropriate. People are making decision not based on rational scientific and engineering judgment. Now, the Texas panel that evaluated the matter, they did it on a rather scientific common sense basis, and they came to the conclusion that 10 CFR 61 was adequate.

Now, people are talking to NRC. We want aboveground vaults, below-ground vaults, earth-mounded concrete bunkers and all this, but why are they doing this? Are they doing it from a position of good engineering, proper expenditure of money or are they doing it because of public pressure and political pressure?

One can address the problem, solve the problem, and you may have to change what you are doing because of public perception, but maybe we should try to change the public perception.

MR. MORGAN:

That is a very good point.

MR. MEYER:

Has anybody stood up and said, "Damn it, you know, we have evaluated this, and this will do the job"? Or is everybody just caving in, saying, "Well, we have got to do something. So, they may not like that." I think this is something that it behooves us as engineers and scientists just to stand up and say what the facts are and try to educate people.

MR. MORGAN:

I couldn't agree with you more, and I don't know who would be more appropriate to explain to the general public than engineers and scientists. The fact of the matter remains, when those same people go into a ballot box, they are going to hear the last empassioned plea from a politician who is going to say, "I am going to protect you. I am going to demand it," and they will create a myth in somebody's mind about this thing called low-level waste or this thing called toxic waste or whatever. I believe that, and our license designee is in the process, as I indicated earlier, is in the process this very week of going out into the community in an outreach program that is hopefully intended to allay some fears and get some community support for the location of a waste disposal facility and the technology that will be used to dispose of low-level waste, and that will be one test right there. We are in the process. We are in the Petri dish right now on that very subject. I have taken up more time than it deserves.

MR. DORNSIFE:

I would like to make a comment. I just cannot resist this because this is one of my pet areas. I think the problem has been from my perspective that over the last several years many of us in the States have been crying for exactly what you are talking about, Lou. We needed that information three years ago to fight the battle. Now, the war is

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lost. People are convinced that they want something better than shallow land burial, and you are not going to convince them anyway. The data that you are producing now we should have had three years ago to fight the war. The war is lost.

MR. BLACKBURN:

I would like to make a comment on this, also. The decision, unfortunately, isn't in the engineering side. It is on the political side. We have long since taken the stand that shallow land burial is more than adequate. Unfortunately, we are not the people who make the final decision. If we want to get a site developed in Texas, we have to go to something other than shallow land burial because it just will not fly in the public's eye. We have tried various forms of public education, everything from simple-to-read pamphlets to taking legislatures, to taking members of the communities out to active disposal sites. Again, like I said yesterday, when they are out at the site, it is great, but once they get back into their community, it is not. They say, "No, we need something better. We need something more substantial than good old mother nature to take care of this," and they just don't seem to have the faith in a stable geological formation that has been there for 500,000 years. They like concrete for some reason, and again, if the decision was being made by the technical authorities throughout all the States, I think we would have shallow land burial. Unfortunately, as what has happened over the last couple of years, statutorily a lot of States in a lot of regions cannot go to shallow land burial now or standard practices that we have today. We have to go to some enhanced technology. That enhanced technology, I think, could still be 61. Again, when you talk to the public, they still look at 10 CFR Part 61 as a Barnwell site or a Beatty site or a Hanford site. To them it is all the same. There is no difference between Maxey Flats, Kentucky or the requirements of 10 CFR 61, as far as the public is concerned. I don't think we are going to get away with a standard shallow land disposal really anyplace in the country now because of what has happened in the last couple of years.

MR. GREEVES:

My name is John Greeves. I am Branch Chief of the Engineering Branch with NRC. Mr. Morgan and maybe some of those others who are participating today, I would like to make sure that you are all aware that there is a branch technical position on high-integrity containers in a waste form. You mentioned the State of California is looking into how to contain this waste. We have worked with the State of South Carolina and the State of Washington extensively with this branch technical position. It has worked fairly well. I wanted to make sure that you and others who are going through this process are aware of this technical document, and if you are not, I can provide these. I think it is a good starting place for your process. I wanted to make sure that you and others were aware of that particular document, and we can go over the process that we have been going through with the active waste disposal sites on this particular document. The other point is that you mentioned that you were looking into things like, for example, concrete granite blocks, retrievability concepts and cost effectiveness. In

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watching this process go on, I think anybody quickly realizes these things compete with each other, and I think we would enjoy conversation with folks like yourself on these to make sure that you have the benefit of our observations about how these competing interests impact each other. You could probably take a look at them from your own point of view, and I think you would find it interesting for the staff to provide comments on what we think competition between one and the other are. I enjoyed hearing that you were looking at the cost effective aspects of this thing because I think a lot of people are going to be surprised when they find out what these things really cost.

Thank you.

MR. BROWNING:

Bob Browning, NRC. I would like to just add one thing to the point John Greeves made. It is really more than just a branch technical position, namely, a piece of paper that Mr. Greeves is talking about. The concept for stable Class B and C wastes was that you could go several approaches. Your could do it at the site, through engineering at the site which appears to be the direction that the States and compacts are moving or you could do it back at the generator or some processing facility to produce the stability in either the waste form or the container. The stable form would have to remain stable for on the order of 300 years, and we have actually approved topical reports submitted by industrial companies that wanted to produce such a container or stable waste form and have actually approved it. It is in the marketplace and going into the disposal sites today. Containers that form a rigorous technical evaluation, a case has been made that they will remain stable for on the order of 300 years. I think that is a point that not too many people are aware of. I mean you compare a high-integrity container that has been designed and engineered to be stable for 300 years, for example, to the liners that are required at an EPA hazardous waste site, and one of my show and tells is to show a piece of this high-integrity container versus a liner. I think most people would intuitively say, "I would rather have the 300-year container and the waste encapsulated in small individual discrete elements, rather than depend on rather thin large membranes underneath the entire disposal site." I think that is a very important concept because the two agencies have proceeded sort of in parallel and kind of in isolation from each other, in developing approaches for what is basically a common problem. Namely, how to avoid contamination of groundwater and have evolved into two different routes. It is very important that people know what those two routes are before they make a value judgment that one is better than the other. They have been developed for two entirely different kinds of problems, but I personally thinking the high-integrity container or the waste form stabilization concept has been a major step in the right direction. I think the thing that the State are looking for is a variation or an extension of what has actually been going on under 10 CFR 61.

MR. DORNSIFE:

Just one more quick comment that I would like to make. I think one of the problems the States is facing, at least we are facing is a fault of

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EPA's and not your particular program, Lou, but RCRA. One of the first questions you always get when you talk about a technology or how you are treating this waste, you are doing the same thing you are doing for hazardous waste. In fact, a lot of our siting criteria are taken directly from the State's hazardous waste siting criteria, and they are political consideration. You have to live with them, because that has already been established by a public process. The majority of the public feels that radioactive waste is worse than hazardous waste, and just now some politicians and political staff people are starting to realize that that is not the case, that hazardous waste is the much bigger problem. The public has not yet reached that conclusion. So, if you cannot say that you are doing at least as much in radioactive waste as you are doing for hazardous waste, you have lost the battle.

MR. FEIZOLLAHI:

Fred Feizollahi, Bechtel National. The question is for Jim Morgan. I notice you refer to this magic word "retrievability," and you said that the States was working on some kind of preliminary regulation to require retrievability?

MR. MORGAN:

I sensed that this question would come up. What may have been confusing in my remarks was the fact that the juxtaposition of those two statements was so close. What we are working on, we have no specific statutory requirement for enhanced technology at the present time, nor do we feel that we need any. However, we have in statute regulatory authority to require technology, not necessarily a minimum standard of technology, but we can require -- it is permissive for us to do that. We are taking that option to require some underlying technology regulations now that will be, I don't know how to describe it any other way than, hopefully, best suited to the eventual site that is picked. Part of the technology that will evolve or part of the regulatory requirements for technology that will eventually evolve will include the retrievability consideration. Does that make any sense?

MR. FEIZOLLAHI:

I guess so, because if you require retrievability, obviously it is going to affect shallow land disposal because as you know, I don't think 10 CFR 61 addresses retrievability at all.

MS. MELSON:

Good morning. My name is Gail Melson. I am with the Illinois Department of Nuclear Safety. Unlike Jay Dunkleberger, we don't get the question of where is Illinois because I think people know it is out there in the middle somewhere. The question we get, and it may be part of our heritage with politics and elections, but the question we get is what is Illinois up to? So, I am going to try to explain to you today what Illinois is up to in terms of alternative disposal technologies for low-level waste, and I want to give you some background on this issue, how it evolved in Illinois, and I think that is pertinent based on the discussion we just had about alternative technologies and shallow land burial.

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In 1984, the Illinois General Assembly was working on the Central Midwest Interstate Low-Level Radioactive Waste Compact, and the environmentalists in Illinois were quite involved with this process. Probably their sensitivity to the issue was raised by their experience with Sheffield which is not the world's worst low-level waste site, but it is one that has had some problems, and, also, with the experience with hazardous wastes, that is putting hazardous wastes in the ground and seeing what happens several years later. So, shallow land burial was kind of a key, very key issue in passing the compact. The compact refers to shallow land burial in three places. The first is in the section on policy statements. The second is by definition, and the third is when the compact addresses the regional management plan. The alternatives are something that the regional management plan will address.

At any rate, let me try to summarize what it is that Illinois means by shallow land burial and what is prohibited in Illinois.

First of all, the regional management plan section prohibits use of underground injection wells. So, we will not have underground injection wells for low-level waste in the State of Illinois, and I haven't seen anybody else say that that was something they wanted. So, I think we are pretty clear on that.

The other thing it says is that we will not have shallow land burial which is defined as disposal in or within the upper 30 meters of the earth's surface, and you might recognize that language from Part 61.

Let me go on to explain what it is that we are by law supposed to look at. First of all we are supposed to look at aboveground alternatives. We are, also, supposed to look at things that provide greater and safer confinement than shallow land burial. That is yet to be defined, I think. If we do want to put something in the upper 30 meters of the earth's surface, what we have to do or what we are required to do or what we are allowed to do, and let me read the definition because it doesn't exactly trip lightly off the tongue, but what we are allowed to build in the upper 30 meters is an "enclosed, engineered, strongly structurally enforced and solidified bunker that extends below the earth's surface." So, that is what we are going to have, and of course, it remains to be seem exactly what that means. In the debate on the Senate floor on this bill, the question was raised as to whether or not the bunker or the structure, strongly enforced structure, would be allowed to be covered by soil, and the bill's sponsors said, "Yes, indeed it could be covered." So, it doesn't have to be a bare structure on the surface. It is possible that it could be covered with soil.

Those definitions were incorporated in the Illinois Low-Level Waste Management Act. That Act was passed in 1983. It was a companion bill for the Midwest Interstate Compact which didn't happen to make it through the Assembly, but the Management Act did, and it was amended in 1985, to incorporate the prohibition on our definition of shallow land burial. Let me explain a little bit about the Management Act.

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Again, I think it is an important thing to understand, just in terms of the Department's role in low-level waste disposal. The Management Act sets up a comprehensive system for siting low-level waste facilities and for regulation of those facilities. Siting is set out fairly clearly in the Act. The process is described as are the environmental characterizations which will be done by the State Geological Survey and Water Survey. The Department will establish the requirements for environmental impact studies. At least three sites need to be evaluated. Things of that sort are set out fairly clearly in the Management Act, and then it sets out a series of regulations that the Department is required to promulgate. One of those very important ones is that we are to become an Agreement State. We are fairly well along in that process. In fact, just this week we managed to get the proposed rules through our Legislative Committee, the Joint Committee on Administrative Rules, fairly well intact. We expect we will have a formal license to the NRC in early August. So, we are expecting to become an Agreement State, certainly this fall, certainly this year.

Once we are an Agreement State, of course, we will be the licensing authority. The Department of Nuclear Safety will be the licensing authority. The other regulations that the law calls for include selection of waste facility contractors, that is the people who will actually come into the State and develop and operate the site; waste treatment standards and waste facility standards which will parallel Part 61, but, also, I am sure we will be adding some things for Illinois' situation. There are other regulations that come down the road, like compensation for people who are affected, and transportation and things of those sorts, but those three are the ones we are focusing on now: contractor selection, treatment, and waste facility standards.

Let me move on to explain a little bit about what we are doing with alternative technologies in Illinois. Our main focus of attention earlier this year was an international symposium which we held in Chicago in later February or early March. We brought in people from Sweden, West Germany, Belgium, France, Great Britain, Switzerland, Japan and Canada to talk about what they are doing, what those particular countries are doing with wastes, what things they are working on.

It was really very interesting, I mean aside from having the opportunity to look at slides of mountains in Switzerland and pondering the mountains of Illinois, we had the change to ask some questions and get some good discussion among the various participants. We, also, had some of the domestic vendors talking about what their thoughts on the subject were and what their plans were. We are working on the proceedings from that conference, and I expect they will be out in the fall. I keep pushing the date back, but I think it should be this year anyway.

Another thing we have done is convened a technical advisory panel, and we have called on about six or eight, and I cannot remember the exact number, but anyway a group of about that size with varying expertise, but generally technical expertise to help guide us in our think about

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what it is we want from an alternative technology; what are the crucial questions that Illinois should be asking of its contractor. We met once, and John Starmer referred to that yesterday, and heard presentations by the NRC, by John and by Vern Rogers who, if you haven't met Vern, is probably the person who seems to be doing all the work on alternative technologies, and you will meet him eventually, if you haven't already.

We will be presenting them with a paper describing in more detail the alternatives and the pros and cons, as we see them with the various alternatives that are being presented or that are being talked about.

Let me move on now to some general comments about Illinois' approach and the things that we are considering. The first point I would like to make, and I think it is an important one and it needs to be understood. The Department of Nuclear Safety, once Illinois becomes an Agreement State, will be the regulatory authority, and that means we are not going to be coming to the NRC with a disposal alternative and saying "Have a look at this." There are going to be other States in that position as well. Unlike Texas, we don't have an organization that is out there developing a facility. We are going to be regulating a facility. That means that we are more concerned with questions, and we are more concerned with the broad approach and the various components that need to be looked at. As a regulatory authority, I think we can, also, make the same argument that the NRC makes about not wanting to be in a position of promoting or developing a particular commercial process or application.

So, when we are asked, what is it the States want and what is it that you in Illinois want, it is hard for us right now to give you a very specific answer. We are not in a position right now of saying, "What we want is aboveground vaults" or "What we want is below-ground vaults." We are in the position of looking at the alternatives and trying to find out what would be best in Illinois. Clearly, we are not going to have shallow land burial, despite what everyone thinks may be adequate; it will not happen in Illinois, and that is quite clear in our minds anyway.

We are in an important transition period, and I think the other States that are following along will be in that same transition period. It is a bit early to asses the specifics of what we want. We are not focusing in on a particular alternative at the moment. We are trying to look at the various ranges of things, and let me, also, raise another point here, and that is some of the work that Vern Rogers has done, has been very interesting with regard to classifying disposal technologies and trying to get away from using terms like aboveground vaults and below-ground vaults and earth-mounded concrete bunkers and things of that sort, but rather looking at the various characteristics of these technologies. Is it above or below grade? Is it deep? Is it shallow? Is there structure or not? Is there fill, things of that sort. I think it is a good way of looking at the technologies, and it is a good way of getting away from some of the imprecise notions of what is an earth-mounded concrete bunker.

It is, also, very useful when you consider the fact that we are going to have to match a particular site with particular geological and hydrological characteristics and meteorological conditions with a particular technology, and I think that is important to consider. When you are looking at standardization, that is very useful and very important, but you, also, need to consider the fact that Illinois, unlike Texas, does not first find groundwater at a depth of 2000 feet. We are not going to have that kind of site. We are going to have a humid site, a wet site, probably with clay and things of that sort, but it is not going to be a desert area site.

So, what we are looking at are components. Eventually it will be site-specific components that have to be matched with a technology.

I think where we can use NRC assistance is in things like modeling: performance modeling, site performance modeling and technology modeling. Those are things that would be very useful to have some help with, and other things include evaluation of common aspects of various technologies. Concrete is a subject that comes up fairly often. There are other kinds of material,s high-integrity containers, things of that sort. We would like some help on looking at those things. Some of the information is out there, and we just need to avail ourselves of it.

Licensing is a very important consideration. The NRC will be involved in some way in licensing, I would guess, several sites if this compact scheme works out. Illinois will only license one site. Therefore it would be very useful for us to rely on the NRC to some extent with help, either in staffing or just expert assistance in the licensing process.

Those are kind of general things that come to mind with regard to what NRC has done. We appreciate the help they already have given us, and we think it has been very valuable, and we would like to encourage this continued talk at the early stages.

I will try to answer any question you might have.

MR. BROWNING:

I am Bob Browning from NRC. Gail, it sounds like you are essentially trying to do the same thing. We are trying to get an understanding of what characteristics are really being looked for in these alternatives. This expert group that you have gotten, could you elaborate on that a little bit more, the kinds of expertise you have been able to draw on and whether you have been any more successful than we have in our attempts to try to clarify to the point where we can articulate it when we talk with the public about exactly what is it that these alternative sites will produce that the 10 CFR 61 site won't produce? I hope I am not coming across sounding defensive, but 10 CFR 61, we are trying not to; it is sometimes hard not to. If in fact, your group has been able to articulate that, maybe we can draw on that experience and then move our guidance ahead, focusing in on the kinds of characteristics that your expert group is coming up with.

MS. MELSON:

We have had one meeting so far on that group, and it was really an introductory meeting, kind of bringing them up to speed. These are not people who deal every day with low-level waste and technologies. They are people with broader backgrounds than that, and with only one meeting under our belts, it is kind of hard to say where we are going to go from here.

The next meeting should focus in on more of the specifics, and they did raise some questions, at the initial meeting with regard to criteria. Cost was one criteria that came up, retrievability; ease of licensing was an issue that came up in their minds, but it is not entirely clear to me. I don't have a good answer for you at this point, and as far as your second question I am not exactly sure I remember precisely what your second question was.

It is more along the lines of?

MR. BROWNING:

I guess it wasn't so much as question as a desire to continue to get visibility which we apparently have had. Dr. Starmer was at the first meeting. If we could continue to get visibility of your effort in this regard, because it sounds like something we could benefit from, also, and draw on, rather then duplicate the effort.

MS. MELSON:

Sure, no problem.

MR. TRUBATCH:

Good morning, Gail I was interested to hear the approach of looking at alternative technologies from a slightly different point of view, but what I didn't hear was where disposal criteria are going to fit into that and when the department is going to address what the criteria are going to be because it seems to me that criteria to a certain extent drives the technology you are going to have to look to.

MS. MELSON:

Could you maybe elaborate a little on what you mean by disposal criteria?

MR. TRUBATCH:

Say the release rates or what kind of physical processing you would need for the waste to make it compatible with sites; do you contemplate processing the waste so that it would be compatible with any site the waste itself would be so immobilized? Do you contemplate processing different wastes to fit different sites according to the mobility one could expect? The way you answer that determines to a large extent technology. For example, if you look to a complete demobilization upfront at the waste site, independent of the repository, then you would be shifting your emphasis in one direction. If you were looking to the

repository itself more than to the waste form, you would be shifting your emphasis in a different direction.

MS. MELSON:

Those are good points. I am glad you raised them. One point I was trying to make is that we are really at the very beginning stages on this, and those are the kinds of things that I hope the Technical Advisory Panel will help us with. I think we are aware that we have to have a system. It is not just a disposal technology all by itself. We need to consider waste treatment, waste forms, all those things when we are putting together our waste facility standards which is a regulation that we will be coming up with. So, those are things we will have to --

MR. TRUBATCH:

Yes, but my real question is can you go forward with the alternative technology search without having the standards first? It is one of these chicken and egg problems.

MS. MELSON:

I think we can, as long as we keep it open, which is what we are trying to do. We are trying to keep in mind all the alternatives without narrowing down too much in these early, say, the first year or so in the coming year. Then that is why we are trying to keep our options open, because we are not sure enough of where we are going to narrow it down.

MR. TRUBATCH:

What do you see as the timetable for standards versus technology choice?

MS. MELSON:

First of all, I don't think we are going to be choosing a technology per se, and we are not going to choose placement with, I mean that is kind of a semantic problem maybe, but time schedule, well, within the next year we should be coming up with waste treatment standards. That is certainly a start. Waste facility standards will be somewhere past that, but within the next couple of years, we should be fairly well along in that.

MR. TRUBATCH:

One last question, the Low-Level Waste Management Act in Illinois, also, discusses trying to minimize the number of facilities. Now, that, it seems to me, also, has to be factored into this look at technology and standards, because I could conceive of standards which would be applicable to specific waste streams and give you lots of different kinds of facilities.

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MS. MELSON:

That is true, and the compact commission, the regional management plan that the compact commission will put together will address the issue of how many facilities, number and type of facilities. So, that, also, figures into it. Does that confuse the issue?

MR. TRUBATCH:

Again, I don't see how one could answer that question without, also, answering the questions of what kind of technology and therefore what kind of standards one needs.

MS. MELSON:

I will take the point back.

MR. TRUBACH:

Okay, thank you.

DR. TOKAR:

My name is Michael Tokar. I am the leader of the design section in the waste management engineering branch that John Greeves is the chief of. It is within our section and branch that I would expect much of the technical review activity would take place regarding alternative technologies. I would like to suggest an approach or some strategy that I envision as being a reasonable one to follow in terms of trying to pull together this question of technology versus standards or criteria or what have you.

First of all, I would like to say that I have been with the agency a number of years, primarily in the reactor regulation side, and I can see where I think there are some parallels there and some experience that we can draw upon from the reactor licensing arena. It seems to me that a way to approach this going back to some of the comments made earlier by other people, such as Bob Browning -- The first question that I think needs to be answered or addressed by the States or potential applicants is what do you really want an alternative technology to do for you that shallow-land burial will not do or won't do enough of? You have to answer that question first. When you do that, then you can start to decide or focus on what are the particular features. I mean it is almost an automatic reflexive step that the mind doesn't have the ability to stop the brain synopses from, such as the electrical impulses from moving from one cell to another. The net step on goes through is automatic, and that is to ask what are the particular features necessary in order for a particular alternative technology to satisfy that particular need that you have in your mind. When you do that, the next step is to, again, have an almost automatic step which is to ask or decide what functional requirements does that particular engineered feature need. If you are going to use a reactor technology term, what does that particular feature have to have in order to ensure that you are going to satisfy that general broad objective?

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In the reactor licensing case, and some of you may be familiar with Appendix A of Part 50, there is contained in that particular portion of the regulation what are called general design criteria. What I would envision is up to this point where we are talking about functional requirements or principal design criteria that responsibility for developing those things is primarily yours, that is the applicant's. One you have determined what it is you want, we would be able to address from a licensing standpoint what the general design criteria need to be. The general design criteria being those minimal requirements that would have to be provided to ensure that the functional requirements are satisfied or the principal design criteria, if you will, are satisfied.

It is our intention, at least in my mind it is, to sometime early in calendar year 1987, to have some initial draft general design criteria in place. I would see us doing that by a combination of in-house activity, as well as technical assistance that we would attempt to obtain from a contractor or laboratory.

As you know, the next step is or by the end of the calendar year we have to have what are called technical requirements for alternatives which, again, in my view, would be the equivalent of specific acceptance criteria. Again, going back to the reactor example, the difference between or the relationship between general design criteria and specific acceptance criteria is as follows: You can take an example of a general design criteria and it is in Appendix A, Part 50, within a broad category of criteria that fall into a class called protection via multiple fission product barriers. General design criterion 10 in that particular group addresses something called core design or reactor design. It says something like this, that the core and associated reactor protection systems must be designed such as to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including abnormal operational occurrences.

It is interesting to me, at least it has been for many years, the fact that specified acceptable fuel design limits which is it the term that is used in many GDC's in part 50 are never defined anywhere in the regulation. Those are limits that the applicant proposes in his application which the staff reviews against the specific acceptance criteria that are in the standard review plan and determines whether or not those particular design limits are acceptable or not.

That is the procedure or the way that I see that things ought to hold together. Those specific acceptance criteria we would have, hopefully, in place by the end of calendar year 1987, as part of our attempt to get the standard review plans developed for alternatives. It is these kinds of things that we are doing now for shallow land burial standard review plan wise. So, that is the way I think the process really ought to go.

MS. MELSON:

Okay, we will follow that because we are going to be in much the same position.

Thank you.

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MR. NUSSBAUMER:

If there are no further questions, let us take a break until about 10:15.

(Brief recess)

MR. NUSSBAUMER:

If you will take your seats, we will start the meeting.

MR. DORNSIFE:

My name is Bill Dornsife from the Pennsylvania Department of Environmental Resources. What I would like to do is report to you on what Pennsylvania has been doing to develop specific design/performance criteria standards for an alternative disposal technology. Hopefully, it will answer some of Bob Browning's concerns about what is needed. He may not particularly like the answers, but this is our first shot at what we really think we need.

You recognize that Pennsylvania and probably most, if not all, of the Northeast has specific hydrogeological problems. We would love to have a square mile of desert in Pennsylvania. We probably don't even have the same kind of clay that South Carolina has. Talking with hydrogeologists in Pennsylvania, the best we have is probably glacial till which you probably never can characterize adequately. You may never know how the site is going to perform if you don't have some sort of an engineered barrier. So, I think in our particular case, it is not just a public perception problem but from a technical standpoint we may need engineered barriers to show that the site can perform as we expect it will.

To give you some background on why we have gone the approach of developing performance criteria, let me just give you a brief description of how Pennsylvania is at least conceptually, in our draft implementing legislation approach the siting process. I emphasize this is draft legislation which will be probably introduced in about one week. We are hoping it gets passed this year, but obviously we cannot take any further action beyond developing criteria until the legislation is enacted.

Basically the draft legislation involves a two-tiered siting process. We would first of all select an environmental contractor who would take our screening criteria and go out and screen Pennsylvania to find four potentially suitable areas that you could probably find a site in the area that could be licensed. With those four suitable areas in hand, we would then select a site operator, a licensee designate, who would then select the site. The RFP for selecting the licensee designate would include technology design criteria. A large factor in selecting that contractor would be who proposes the best technology that meets the criteria. With the criteria, this contractor would be turned loose in these potentially suitable areas.

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There are several reasons for going this approach. First of all, it would give the contractor, the site operator, some flexibility in finding an area that might be receptive. We cannot turn him loose on the whole State. That is just not politically feasible. It is probably a minimally acceptable process, and it, also, probably gets you to the point where you can reasonably identify areas that can be licensed. The site operator would then select the final site that he thinks he can license, and then the State would approve the site in the licensing process. Our agency, DER, would be the licensing authority. Hopefully we won't violate any of NRC's compatibility requirements on conflict of interest.

Like I said, we cannot really start that process until the implementing legislation is passed, but in the meantime, we have been developing criteria. To develop that criteria we have established a Public Advisory Committee. Under authority given to us in a previous law to have general advisory committees for the Bureau and the Department.

What we have done in establishing this Committee was to first of all identify those key interest groups in the State that had a critical interest in the low-level waste issue. So, we have looked at the whole spectrum of groups, and at the one extreme we have the Sierra Club, Pennsylvania Environmental Council; at the other extreme we have the generators. In between we have groups like League of Women Voters, Pennsylvania Township Supervisors, County Commissioners Association, the Conservation Commission, Pennsylvania Environmental Council, Pennsylvania Society of Professional Engineers, Society of Consulting Engineers, Pennsylvania Society of Geologists, and a utility group. This will give you a flavor of who the Committee consists of. I can give you the specific names and the organizations, if you would like. We then asked those organizations to designate one person to represent their interests on the Public Advisory Committee, and to date we have been really pleased with the cooperation and the consensus we have been able to reach with that Committee. It has been a really enlightening experience for me and a lot of other people that we have been able to reach the consensus we have with that diversity of opinions.

This Public Advisory Committee was charged with the task of helping us develop site suitability criteria and, also, developing technology performance criteria. I think you can all recognize that somewhere along the line, no matter what your mechanism is for selecting your technology, you are going to have to address the issue of how the technology will perform. For example, if you have a 6-inch concrete barrier. Someone is going to ask you, what does that do? If you answer is th shrup your shoulders up and say, "Hey, that just provides something somebody can kick and touch and feel," it is not going to fly. You are going to have to develop some criteria on what that barrier does for you. So, we have decided to develop that criteria up front.

As far as the efforts of the public advisory committee to date, they have been meeting for about a year. We have been holding meetings about

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once a month, and we have just about finalized the site screening criteria. NRC has been been involved in that process, and we really appreciate the assistance that NRC has given us. They have essentially attended all our meetings, provided technical support where we need it, and it has been, I think, a learning experience for both of us. They are learning what kind of problems we are facing out there in the real world, and they are, also, providing us with some technical assistance to answer some of the difficult questions that we have encountered.

We have developed the site screening criteria, and I can make that available to anybody who would like to see it. It is a public document. At our next meeting in July, the Public Advisory Committee will take their last look at it to make any final changes they think are necessary.

Over the last two or three months we have been in the process of developing technology performance criteria. The way we have approached this effort is to ask for volunteers on a Subcommittee. I think to the great extent this Subcommittee reflects a pretty good cross section of the main Committee. There are several generators on this Subcommittee, and there are also, two environmental groups on this Subcommittee. So, I think it represents probably the two extremes and most of the vocal members of the full Committee. So, hopefully, we can quickly reach a consensus with the full Committee.

Probably two of the biggest problems that we have encountered so far in this Subcommittee activity is first, making the criteria general enough to cover the full range of options. It is difficult when you are talking about specific performance criteria to make it apply equally to aboveground facilities versus below-ground facilities. That has been a real problem.

The second major problem we have had is in being specific enough with these criteria. How can you specify how an engineered barrier is going to perform when you have no idea how concrete is going to perform over time? That has also been a really big problem and an area we could use some help with.

Like I mentioned, the Subcommittee has completed its deliberations. This criteria is in very drafty form, but I think it is important enough to present to you in that drafty form. Recognizing I cannot make it publicly available to you at this point until it has been sent to the Public Advisory Committee in about a week or so after we have incorporated the last round of comments from the Subcommittee. What I would like to do now is present you with an outline of what that criteria actually says.

First of all, there are a couple of different parts to the criteria. The first part is essentially a usage guide. Remember, it is proposed that this criteria would become part of an RFP that would be used for selecting a site operator, and hopefully we won't need to go through the regulation-setting process because that would certainly impact on our schedule. We are hoping to be able to convince the legislature that we can use it as guidance in the RFP with maybe some sort of a public meeting process to get some additional public input.

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What we have done is to organize the criteria into several different categories. First of all is the usage guidelines, how you use the criteria. Secondly, we have essentially repeated the performance objectives of Part 61, saying that the criteria has to generally meet those performance objectives. Then we have established technical requirements. These are the requirements that the technology has to meet and finally, we have other considerations which include economic considerations which basically say that once you have met all technical requirements, then you look at these other considerations as a final step. They are not as important as the technical requirements.

The first criteria site ability and licensability. The technology must be compatible with the screening criteria and with any current regulations, meaning Part 61, that exist.

The second criteria is that it must accept all wastes streams that are State responsibility. Obviously this implies A, B, and C waste streams and, also, don't forget NARM (radium). That is, also, a State disposal responsibility. I know it is not included under the definition of low-level waste, but it is a waste source that will need disposal.

The third criteria is that the State of technology must be such that it can be licensed and operable by 1993. Now, there are some more specifics in the language that talks about things like, using conservative designs, using materials where you have some data available, quality design, using multiple barriers and the monitor ability which the committee thought was very important - how you monitor the performance of the technology over time not environmental monitoring or leakage monitoring but actual material monitoring - how you know it is meeting the design criteria you have established.

I forgot to mention that the Appalachian Compact has a clause in it that prohibits shallow land burial by the host State. Shallow land burial is defined as disposal in trenches without engineered confinement or in containers approved by the host State. One of the most difficult parts in establishing this criteria is how you define enhanced confinement. It is not a very easily definable concept, and probably we struggled the most with defining engineered confinement because that is obviously the key. What is engineered confinement? What we finally come up with and again, remember this is draft, is that we need a dedicated engineered barrier. What is a dedicated engineered barrier? First of all the dedicated engineered barrier is defined as being leak resistant, and that leak resistance is defined by later criteria. It must be leak resistant for at least the institutional control period, and it must be stable for at least 300 years. It is further defined that if any feature of the engineered barrier is required to meet the Part 61 stability requirements, for example, or any other Part 61 requirements, it does not qualify as the dedicated engineered barrier. You need an additional engineered barrier a dedicated engineered barrier.

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In addition we have, also, established a performance objective for this engineered barrier. What we are proposing is that neglecting the hydrogeologic features of the site for the institutional control period, you have analyze and show that this technology all by itself will meet the Part 61 performance objectives. Then after 100 years, because you are not sure of how materials are going to perform you can take credit for the hydrogeologic characteristics of the site. However, for the first 100 years you have to show the technology by itself will meet the Part 61 criteria.

Again, that is the key criterion. That is the one we struggled with the most.

The next criterion is that the technology must allow for recovery of the waste for at least the institutional control period. What we mean by recovery - that is not a very well-defined concept - is not retrievability. Retrievability, the way I define it, is that you design into the system the fact that you want to take it out at a certain time. That is retrievability. Recoverability is making the process easier to take it out, if you have to. I think we need to probably get some better words there, but that is conceptually what I view as recoverability. It is very different from retrievability, and I think it is a better word to describe what we are talking about. Retrievability to me implies storage. If you design something to be retrievable, that is storage by definition. If you are going to recover something, that implies you are including it in the design but not necessarily planning to actually take it out.

The next criterion requires that the design must provide for long-term passive isolation and must minimize active maintenance. That is just a repeat of NRC's criteria but is very important from a disposal standpoint. This is another thing that distinguishes disposal from storage.

The next criterion addresses water intrusion, and this is one we think we need to work on because it is not very specific. What it says at this point is that the technology must inhibit or minimize the probability and the extent of both water getting into the waste, and it, also, must impede the water going out of the waste. So, it is a two-way process, and in the process of impeding, you could include ion exchange, absorption, any other characteristic that impedes radioactive release from the facility. I think we need to maybe put a number or some kind of more specific criteria on that, but in the absence of performance data, we really cannot do very much at this point.

The next criteria is a definite improvement from Part 61. We intend to specifically identify in criteria where we have exceeded Part 61 because that is very important form a political standpoint. You ought to identify specifically where you have done something better. This criterion requires that both Class B and C waste should have intruder protection. Since you are talking about intrusion occurring after 100 years; the Class B waste is still potentially an intrusion problem. So, both B and C wastes needs to have intruder protection. Also - which is a distinct departure from Part 61 and the subcommittee didn't reach a

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consensus on this but we are proposing, that instead of meeting the 500 millirem requirement for intrusion, we are requiring the intruder barriers limit the exposure to an inadvertent intruder to the same dose as the general public. There appear to be no reason why an intruder barrier cannot meet that same criteria because most of the analyses show it can. It is reasonable and achievable.

You all probably recognize Pennsylvania had a particular problem with Class C waste. The next criteria addresses that Class C issue. We are suggesting that the facility accept only solidified, stable Class C waste in a separate part of the disposal site - separate from B and C. You must be able to selectively monitor the modules and individually recover Class C modules.

I guess this is very ambitious on our part, but we are trying to address in the next criterion the mixed waste issue. We are essentially treating mixed waste the same way we treat Class C waste. If anybody wants to dispose of mixed waste then they must pay for it. If this criteria is not compatible with RCRA, I don't know what will be. You should also recognize that this is an interim response until this issue is resolved at the national level. If some criteria comes along later that resolves it at the national level, we might reconsider this criteria.

The next criteria talks about maintaining direct and airborne radiation during operations as low as reasonably achievable. That is, again, right out of Part 61. During operation you have to maintain releases as low as reasonably achievable.

The next criterion talks about minimizing contact with standing wastes or rainfall, prior to waste emplacement. The design ought not to allow water contact with waste prior to emplacement.

We, also, have included a general criteria that specifies that the performance goals should be compatible with the hazardous life of the waste. We are saying that the disposal cells designed for specific classes of wastes have to be stable and confine the waste for 100 years for Class A, 200 years for Class B and 500 years for Class C and mixed waste.

The next criteria requires an analysis that the technology can withstand the maximum credible external event, i.e., earthquakes, tornadoes. It needs to be designed to withstand those kinds of external events with no unacceptable consequences.

The next one, and again, this is a distinct improvement over Part 61, is that you have to include a reliable monitoring system as part of the disposal cell. This is in addition to the environmental monitoring system. The dedicated monitoring system has to operate at least for the institutional control period when it can be then made passive, and you don't need to consider it anymore.

Also, as a general criteria the design should incorporate features that will facilitate remedial action, if it is necessary. We also have a

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criteria, that I didn't include on here, that requires that the design protect people against non-radiological hazards. If you handle mixed wastes at the facility, you ought to take those non-radiological hazards, into consideration.

Finally, as a last technical requirement, the design should be capable of being analyzed, modeled and characterized because you need to demonstrate what the performance of this technology is going to be if you are to satisfy the enhanced confinement criteria.

Those are the technical requirements that we have established in draft form. The remaining two are other requirements, which are only considered after you have met all the technical requirements. They state that you should minimize land use and surface area that is removed from alternative uses, and finally you look at costs.

Now, a couple of caveats. I want to stress to you this is a very draft document. It has not received review by our full Committee. I thought it was important enough because a lot of the key discussion I heard today is, "Hey, give us something we can begin to consider." This is something I think we can all start working with.

Also, I want to stress that this criteria was developed with both extremes, the generators on one side, the environmentalists on the other, and believe it or not, we reached a pretty good consensus. Our next step is to go to full committee review. If the committee conceptually thinks it is decent, at our next committee meeting we are going to invite in the potential site operators, given them a copy of the criteria and ask them, "Can you meet this criteria, and approximately what is it going to mean in terms of cost; what is going to be the critical problems in meeting it and what are those things going to cost?" So, we are going to get some input from the potential site developers on how readily they can meet this criteria, and where we may need to go back and rethink because some of this may not be achievable. This represents at this point the best thinking that we have on a technology that you may be able to sell to the public. Upfront you can say, "This is what we are designing this technology to do. Is this good enough?"

Thank you very much. I will answer any questions if I can.

Dr. STARMER:

I have a question. Bill, in your deliberations, has your committee considered the doability of your 17 points? In other words, one is that it be technologically feasible by 1993. Have you thought about it that every time you come up with one of these requirements, you say, "Well, can I envision this?" As you know, I haven't been to the meetings.

MR. DORNSIFE:

On that committee we have three engineers who represent consulting engineering companies who looked at that particular problem. They didn't have all the answers. They don't know how long these materials

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are going to perform, but in their estimation, they thought it was doable. I am taking their expertise. The final proof is going to be when you ask the operators what problems they are going to have. I am not sure how candid they are going to be with us, but that is part of the process.

DR. STARMER:

I have another question. I don't remember the number of it, but one of them suggests that your disposal units should be designed so that they won't leak. That was your engineered barrier, and I am a little bit puzzled. I am always a little bit puzzled about this, in that most radioactive low-level waste is solid waste. If your regulations are compatible, they are going to require that any liquid waste be solidified and that there be a maximum of 1 percent free-standing water or liquid, and given the volumes that are involved and then the volumes that ever started out being wet in the first place, what is going to leak?

MR. DORNSIFE:

We mean leak resistant. When you have a leaky basement, water is leaking in, not out. We are talking about leaking water into the facility.

DR. STARMER:

That would suggest to me that you have got some hydrologic problems that you might want to look into terms of siting.

MR. DORNSIFE:

That is why I said that we are going to put a number on that eventually, and what that number is going to be is going to depend to some extent on what the vendors tell us they can provide us.

DR. STARMER:

Along the same lines in No. 7, it seemed like you were going to keep any liquid that leaked in, in there.

MR. DORNSIFE:

Or retard it.

DR. STARMER:

If it is leak resistant --

MR. DORNSIFE:

I cannot imagine making a system that resists water coming in that wouldn't resist water going out.

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DR. STARMER:

That is a slight problem, isn't it? We have this thing called the bathtub effect. In other words, if your roof cover, whatever you want to call it, fails, you are in trouble.

MR. DORNSIFE:

Not necessarily. I mean if you have gone to the trouble of making leak-resistant from that standpoint, and there are, also, stability requirements and all the other things that are required, and there is some other language in there that talks about filling voids and all the other things that I think satisfies bathtub concern, particularly for B and C wastes.

DR. STARMER:

All right, I am just --

MR. DORNSIFE:

I understand.

DR. STARMER:

-- interested.

MR. DORNSIFE:

I think maybe you ought to come to the full advisory committee meeting in July and get the flavor of, a better flavor of what we are talking about. If will be well worth your while.

DR. STARMER:

I will try.

MR FEIZOLLAHI:

My name is Fred Feizollahi of Bechtle National, San Francisco. I noticed you now call it recovery, and you brought another term in there, selective recovery. We looked at this problem before, and I wonder if you know what you are getting into. What I understand by selective, monitoring and selective recovery you are saying that I want to be able to detect which part of my disposal site is failing so that I can go in there and retrieve it. To do this, how are you going to define the limits of that selective area? Is it going to be the entire trench; is it going to be a 100 foot by 100 foot area limitation, and depending how selective you get the cost of the overall retrievability, recovery and monitoring could be really phenomenal. So, I am just cautioning you.

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MR. DORNSIFE:

You recognize we are only asking for that for Class C waste. We are talking about monitoring the disposal cell which is the larger entity. Now, there are definitions obviously. We are talking about container at the first level, a module at the second level and a disposal cell at the third level. So, we are talking about monitoring everything from a disposal cell standpoint but monitoring selectively Class C modules.

Now, we have had a real problem in Pennsylvania with Class C. The alternative to treating this as a very special waste is to not accept it at all. So, we have to take very special precautions because a large segment of the Pennsylvania public and politicians don't want us to accept Class C at all.

MR. TEDFORD:

Chuck Tedford, Arizona. Bill, I would like to compliment you on a very fine set of performance criteria. I would like for us to be given the same opportunity to look at those performance criteria in the Western Compact configuration, and I want to compliment you, also, on your compact which is essentially the Western Compact and was refined and orientated, and I think probably came out in a little better format than we started with initially.

With that said, I would like to ask you a question. What do you have in mind with regard to internal monitoring? Are you going to put a detector in, a line lead in addition in the containers that are going to be stored, in addition to the environmental monitoring? What did you have in mind with regard to detectors?

MR. DORNSIFE:

I guess I see and again this is up to the designer to satisfy. I see possibly some sort of a collection system. We would collect any liquid and before it would reach the environment, and monitor that liquid for the institutional control period.

MR. TEDFORD:

Okay. The other comment I would have, is the committee in general, the conference committee working on a set of Mach 1-MOD 5 recommendations to all the other States that embody these same principles with regard to performance criteria? What are you working on at the present time?

MR. DORNSIFE:

We don't have a charge. Maybe if you are still on the executive board you might want to consider a new charge for us. We have run out of charges.

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MR. TEDFORD:

Another Irishman has taken my place on the executive board, and that is Bob Hallisey, and so, he can hear that plea.

MR. DORNSIFE:

We haven't really pursued alternatives very much at all. We have been doing other things besides looking at specific alternatives. Now, one of the things we are hoping to do, and the conference has asked DOE for a grant to do this is to have some ongoing dialogue between State technical people. You know, maybe the State technical people get together once a quarter to exchange ideas and talk about what they are doing. I think that is critically needed. We need to learn whether other States are doing it and what problems they are having. These kinds of forms are invaluable for that kind of --

MR. TEDFORD:

I think you did a very find job, and I think the people on your committee are probably some of the best thinkers in this particular area in the country, and that should be looked at.

MR. DORNSIFE:

By the way, if you would like, and give me your names and addresses, I can send you a copy of the criteria, both the screening criteria and this criteria once it is made public.

MR. TEDFORD:

I would like a copy of it.

MR. DORNSIFE:

If you would, still give me your name; so, I can keep track of it, Chuck.

DR. AUGUSTINE:

I am Bob Augustine, Radiation Safety Office for the National Institutes of Health which for some of you out-of-towners who may not know, our campus starts just two blocks north of here and runs for a little way along Rockville Pike. I would like to comment on something you may not think is pertinent to Bill's presentation, but hopefully by the end you might see it, and that is on the impact of the surcharges and penalties on the fairly large volume generator of low-level radioactive waste. NIH uses a lot of radioactive material. We probably generate more low-level wastes than any other research institution in the world. The surcharges for this year along, if your volume that we have to ship for burial remains the same as it was last calendar year, we estimate to be $80,000 just in surcharges which is going currently to Nancy Kirner's agency in the State of Washington. By 1992, with all of the various surcharges and with the assumption that the full penalties will be

assessed if Bill does not get his program on track, it will cost the NIH close to $1 million in 1992, just in surcharges and penalties. Those are tax dollars. Those are research dollars. They come right off the top of the appropriations for concern and everything else and not bemoaning the fact that we have to pay these, but this is a way, hopefully, to encourage Bill. Maryland is in the Appalachian Compact. NIH is in the State of Maryland, and our waste, hopefully, and as soon as possible will be going to the State of Pennsylvania. So, we would like to encourage you, Bill, to make as much progress as fast as you can. I offer you the full moral support of NIH, certainly any technical support and assistance that we might be capable of providing. We are a little light on hydrologist and geologists,

(Laughter).

DR. AUGUSTINE:

You, perhaps, could use a proctologist in the process, but we would, also, --

MR. DORNSIFE:

Who is particularly adept at removing heads.

DR. AUGUSTINE:

We would, also, like to offer you any support we can give in the way of public information. We do have experts in health effects, experts in statistics and especially at your time of public hearings, if you think we might be useful in informing the public about the benefits of some of the activities that generate this terrible material that you want to get permission to put in their neighborhood. We would be pleased to work with you and help you in any way we can.

MR. DORNSIFE:

I recognize the problem in trying to get the same message across to other people who need to recognize that problem. So, any help you can give us would be much appreciated.

MR. GREEVES:

That is a tough act to follow. So, I will stay with the technical aspects. John Greeves, again. We view with interest your criteria and obviously haven't had time to give you feedback on all of them but while many are listening, I would like to caution in this area of leak resistance or containment. Your criteria start to sound like what we are looking at for high-level waste disposal criteria, and one of the ones we have the most difficulty with is this criteria for containment for high-level waste facilities. Now, there has been a tremendous amount of work put into it and studies, and that is all available. In fact, I would like to, at some point in time get together with you and

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show you some of that background material so that when folks come to you and tell you that they can meet their criteria, you may have something to compare it with. It is very difficult to meet a criteria that is interpreted as containment, and we have got a number of reports that I think would be usefully applied to that particular process.

MR. DORNSIFE:

Just a comment on that first one. You recognize though that -- and I recognize that problem, but you recognize that what we are doing here is trying to solve a political problem by some technical means. If we can, making it as technically sound as we can, but really solving a political problem. The public doesn't care necessarily how much it costs. That falls on deaf ears. They want the most assurance that they can get that that site is not going to -- you know, once a site shows anything off site, not even off site, out of the cell, the public views that site as failing. I don't care how little it is, that does not matter. Once you see anything out of the cell, that site has failed in the public's mind. There is going to be a large clamor to shut that site down.

MR. GREEVES:

I appreciate what you are saying and I think the point I am trying to get across is as these bodies set these criteria, you have a real potential for handling this criteria to a licensing board. They find whatever is brought forward in their interpretation doesn't meet the criteria, and that is the problem that you may run up against. You need to be very caution about setting these criteria and hopefully listening to a wide spectrum of technical people's views on whether the criteria can be met, not just people who want to come in and build it for you, and you pay them to build it.

Thank you.

MR. DORNSIFE:

Thank you. I appreciate that concern.

MR NUSSBAUMER:

Are there any other questions or comments for any of our panelists this morning or any other issues that anyone would like to bring up at this point?

MR. DUNKLEBERGER:

Jay Dunkleberger from New York. To get back to the question of deep mine disposal, it is an issue I recognize that to get regulations on it, to get a clear body of documents it is a little difficult without going through all the various regulations that have to be applied.

What I am looking for since New York has to look at deep mine disposal is whether or not NRC can put together something for screening criteria as "go, no-go," for existing mines? What should we look at to rule them

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out or to say whether they are possibilities and whether we should look further? Not something that is in detail that we would need to actually license a facility but something that says that if there is water anywhere in the mine, forget it or something like that. So, we have some way of knowing whether we should continue down this road or whether we should ignore it. We should look at what we have got, find out what don't fit and then go on with something else. I think we could really use some kind of screening criteria, guidelines so that we can decide whether to continue on this road or whether we should back off of it with some technical justification and look at the other technologies.

DR. STARMER:

I wish we had a nice easy direct answer for you, Jay, but I think that our answer is going to have to be that we are going to have to work on it a little bit. There are a lot of ambiguities. There are a lot of questions.

Our staff has been looking at it, up to this point pretty much as time will permit. We do have the report from the Corps of Engineers which is available. We have some problems with it, if you will, editorial the way it is written. Some of our staff has some technical problems with it, also which is one reason it hasn't been released. All I can say is that we cannot answer that today, and we are looking at it. We will try to keep in contact with you and see what we can do.

MS. TEFFT:

I have a question which I am not sure is exactly appropriate for this Panel, but since Bill Dornsife is up there and Don, I will ask it and what we can do. You know, we have heard a lot about mixed wastes and wastes below regulatory concern and so forth, but I am just wondering what is being done about NARM. How does this affect a potential host State which is not a licensing State, and where does this come into play?

MR. DORNSIFE:

Maybe you might want to talk about what EPA is doing?

MR. MEYER:

In response to the question on NARM, at the recommendations from the conference and recommendations from the States at a public meeting we had in 1984, we recommended to the Administrator that we include NARM under our low-level waste standards. The Assistant Administrator of the Office of Solid Waste at that time who was Lee Thomas, now our Administrator, he and our Administrator agreed, yes, we would include NARM under the standard. The proposed vehicle was RCRA. So, we started reviewing RCRA regulations and 10 CFR 61 regulations, and there was a strong non-compatibility under certain elements.

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We tried three or four different ways to include NARM, but the new amendments to RCRA, also, wiped out a couple of those possibilities.

Within the past four months we had a, I would say, a final meeting between RCRA lawyers, our lawyers and we came to the conclusion that there was just no way under present circumstances we could include NARM under our RCRA authority and get it disposed of at an NRC licensed site within any reasonable period of time.

We have found a potential way of including NARM under the low-level waste standards. That would be under our TSCA authority which is much more general, and it provides coverage for radioactive materials and other hazardous materials. We have had two meetings between the Office of Toxic Substances and our office specifically to discuss the inclusion of NARM, and the meetings have been very, very favorable. The one possible drawback would be delegation of authority to the States. We think there are precedents where this would not be a problem, and in talking with Bill Dornsife yesterday, he suggested, "How about just delegation of authority to NRC?" And I am not sure whether we have looked at this completely, but we are supposed to have another meeting within a couple of weeks.

We are out of the RCRA "do-loop" so to speak. In two years we made no progress, and now, the Office of Toxic Substance people are apparently helpful and receptive, and we expect to make some progress.

MR. DORNSIFE:

Just to follow on a little bit, those of you not initiated, NARM is an acronym for naturally occurring and accelerator-produced radioactive material, and really the only isotope that is of concern or the main isotope that is of concern from a disposal standpoint is radium 226.

MR. MEYER:

Let me clarify what coverage we are requesting. We are being very, very specific, only two wastes streams that we have really identified. They are both -- one of them is a high-activity NARM like radium needles. The other one is ion-exchange resins used to clean up drinking water supply. We are being very specific that we do not want to include diffuse wastes such as tailings and FUSREP wastes and this sort of thing. This is not the intent. We do not believe disposal in a secure sanitary, I mean a secure low-level waste disposal facility is an appropriate disposal for large volumes of wastes. So, least anybody be worried that they would get a lot of mill tailings or construction material, we are limiting our objectives on including NARM at this time. Some of the other wastes need taking care of, but we are trying to take care of the high activity stuff

MR. BROWN:

Don, I had a comment about the legislation. I am Holmes Brown. I worked for the National Governors Association while this legislation was proceeding through Congress. NARM received attention in the amendments

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only during the last couple of months. There were some presumptions that it was either in or out, but there wasn't much comment about it.

In October and November, it became apparent that there was an awful lot of NARM around, and one of the problems with NARM is as Bill has indicated, it covers both diffuse and discrete sources. Diffuse sources are of enormous quantities. They would have busted the caps that were in the legislation. So, Congress decided in the waning weeks of consideration to make NARM an orphan category. I think when you read through the legislation and the State and Federal responsibilities, the fact is NARM, whether diffuse or discrete is an orphan category. There is no institutional responsibility for it at this point. Some of the operating disposal sites may decide to take NARM on a case-by-case basis, but it is not a State obligation at this point, and my guess is if EPA should make a determination that NARM must go into NRC licensed sites that it is still going to be an orphan category. The States don't have to take it, and some of them may not. Some of the new sites that are being built may be designated to take NARM wastes. I believe the Rocky Mountain region has indicated they would probably do so.

It is optional for them, but it isn't necessary, and you may end up requiring NARM to go to NRC sites and possibly the Federal Government would have to step in because one other provision of the bill said that the above Class C waste now has to go to an NRC-licensed facility, but that issue, like mixed wastes was left unresolved because it was going to break the caps that had been established months before.

MR. DORNSIFE:

Just to follow on a little bit, it is true that NARM is not regulated by the NRC, covered under the Atomic Energy Act, but most States do regulate NARM. It is regulated in the States for the most part. Some States have no licensing or regulatory program for NARM, but most States do regulate it. So, it is a concern at the State level, a big concern, probably one of the biggest concerns we have is waste disposal. Let me, also, point out that the Conference of Radiation Control Program Directors, and probably some of you don't know what that is; that is an affiliation of all the State radiation control program directors and their staff, has just adopted at the last annual meeting a resolution that first of all calls for NRC to develop a suggested Class C limit for radium, and with that limit we are suggesting that DOE, by policy, would accept all radium above that Class C limit into their site that they are going to license for other Class C wastes. We are, also, suggesting this might be a good way of satisfying part of that requirement. We are suggesting that all the radiation control program directors get the word to their compact officials that NARM radium is a potential State responsibility under the Class C limit. Less than the Class C limit, that is a potential State disposal responsibility. You ought to consider it.

MR. NUSSBAUMER:

Are there any other questions or comments?

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Bob Browning, would you like to make any remarks at this point? We are getting close to adjournment, I think.

MR. BROWNING:

I would just like to thank everybody who came. I think that from our standpoint it has been very helpful to have the insight from a State perspective of the kinds of problems you have to deal with, both technical and political, and hopefully we will benefit from it, and I hope you people benefited from getting together.

If there are any other ideas that you have after the fact or you have any questions or problems, please feel free to call, pick up the telephone and talk to me directly or any of my staff, Dr. Knapp, Dr. Starmer or any of the individuals who are dealing with the specific technical area. We try to make ourselves available, and for those of you who are on the West Coast who don't always give with our schedules, if necessary, I would be glad to give you my home number, if that would help make sure we get prompt contact back. So, I appreciate your attending and hope we can continue a continuing effective dialogue, even though the time is late.

Hopefully, by frequent and productive interchange between us and you folks, you will be able to meet the tight milestones in the Act.

MR. NUSSBAUMER:

Thank you, Bob, and with that we will adjourn the meeting.

(Thereupon, at 11:22 a.m., the meeting was concluded.)

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APPENDIX A

Low Level Radioactive Waste Policy Act Amendment (LLRWPAA)
Of 1985
June 24-25, 1986
Holiday Inn, Bethesda
Chairman, Donald A. Nussbaumer, Assistant Director
for State Agreements Program, Office of State Programs

June 24, 1986

	Topic	Proposed Speaker
8:30 I.	Welcome and Introduction	G. Wayne Kerr Director, Office of State Programs
8:45 II.	Low-Level Waste Management Issues and Perspectives	John Davis, Director Nuclear Material Safety and Safeguards
9:15 III.	NRC Roles in Implementing the Low-Level Radioactive Waste Policy Amendments of 1985 (This session will include topics such as approach to dealing with below regulatory concern, emergency access, greater than Class C waste, State certifications, etc.)	Robert Browning Director, Division of Waste Management Kitty Dragonette, WM Rob MacDougall, WM
10:00	Break	
10:15 III.	(Continuation)	
11:30 IV.	NRC's Technical Assistance Program to States and Compacts (This session will address the letters and FR notice on this subject - FR 3866 Vol. 51, No.20)	John Starmer, Section Leader, Low-Level Waste Section, WM
12:00	Lunch	
1:30- V.	Agreement State Issues This session will address the following items: o Concerns over Regulatory vs. Management Responsibilities under LLRWPAA for Agreement States o Limited Agreements option o Training and State efforts to establish capability to process license applications o Additional State issues	Donald Nussbaumer Assistant Director for State Agreements Program

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2:00	VI. State/Compact Perspective o Critical siting activities and problems o Development of State regulatory capability o Identification of needed NRC support - Discussion	T. Blackburn, TX J. Dunkleberger, NY R. Hallisey, MA V. Autry, SC R. Ratliff, TX J. Starmer, WM
3:00	Break	
3:15	IV. (Continuation)	
4:30	Adjourn	

June 25, 1986

8:30	VII. Licensing of Alternative Disposal Methods (This session will address the FR notice issued on this subject -FR 7806, Vol. 51, No. 44)	John Starmer, WM Larry Pittiglio, WM J. Morgan, CA G. Melson, IL B. Dornsife, PA
11:30	Public participation	
12:30	Close	

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APPENDIX B
FEDERAL REGISTER NOTICE
ANNOUNCING MEETING

ACTION: Meeting on Low-Level Radioactive Waste Policy Amendments Act (LLRWPAA) of 1985.

SUMMARY: The Nuclear Regulatory Commission (NRC) will hold a meeting on the Low-Level Radioactive Waste Policy Amendments Act of 1985 as part of NRC's continuing effort to foster the implementation of the Act's provisions. The purpose of this meeting will be to discuss with selected State officials NRC responsibilities under the Act, including the approach being taken and progress being made in fulfilling NRC responsibilities. The NRC staff wishes to obtain State views on technical and institutional issues associated with NRC and the State implementation of the LLRWPAA and to determine any additional areas in which the NRC can be of assistance in the development of disposal facilities. The meeting is open to the public. Following the discussions of the NRC and State representatives, members of the public will have the opportunity to ask questions.

DATES: June 24–25, 1986.

FOR FURTHER INFORMATION CONTACT: Donald A. Nussbaumer, Assistant Director for State Agreements Program, Office of State Programs, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Telephone 301–492–7767.

SUPPLEMENTARY INFORMATION: Preliminary Agenda for Meeting with State Representatives On Low Level Radioactive Waste Policy Amendments Act of 1985, June 24–25, 1986, Holiday Inn, Bethesda, Maryland.

June 24, 1986

Topic

Proposed Speaker

8:30—I. Welcome and Introduction
G. Wayne Kerr, Director, Office of State Programs
8:45—II. Low-Level Waste Management Issues and Perspectives
John Davis, Director Nuclear Material Safety and Safeguards
9:15—III. NRC Roles in Implementing the Low-Level Radioactive Waste Policy Amendments of 1985 (This session will include topics such as approach to dealing with below regulatory concern, emergency access, greater than Class C waste, State certifications, etc.)
Robert Browning, Director, Division of Waste Management and Staff
11:00—IV. NRC's Technical Assistance Programs to States and Compacts (This session will address the letters and FR notice on this subject—FR 3098 Vol. 51, No. 20)
Nuclear Material, Safety and Safeguards, Staff
12:00—Lunch
1:00—V. Agreement State Issues
2:00 This session will address the following items: 1. Concerns over Regulatory vs. Management Responsibilities under LLRWPAA for Agreement States; 2. Limited Agreements option; 3. Training and State efforts to establish capability to process license applications; 4. Additional State issues
Donald Nussbaumer, Assistant Director for State Agreements Program, and Staff
2:30—VI. State/Compact Perspective: 1. Critical siting activities and problems; 2. Development of State licensing capability; 3. Identification of needed NRC support
State Representatives
4:30 Adjourn

June 25, 1986

8:30—VII. Licensing of Alternative Disposal Methods (This session will address the FR notice issued on this subject, FR 7808, Vol. 51, No. 44)
NMSS Staff and selected State Representatives
11:30 Public participation
12:30 Close

Conduct of the Meeting

Mr. Donald Nussbaumer, Assistant Director, for State Agreements Program, Office of State Programs, U.S. Nuclear Regulatory Commission, will serve as Chairman at the meeting. Mr. Nussbaumer will conduct the meeting in a manner that will facilitate the orderly conduct of business. Seating for the public will be on a first come-first served basis. A transcript of the meeting and written comments will be available for inspection and copying for a fee, at the NRC Public Document Room, 1717 H Street, NW, Washington, DC 20555 on or about August 29, 1986.

Dated at Bethesda, Maryland, this 19th day of May, 1986.

For the United States Nuclear Regulatory Commission.

G. Wayne Kerr,

Director, Office of State Programs.

[FR Doc. 86-11811 Filed 5-23-86; 8:45 am]

BILLING CODE 7590-01-M

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Appendix C

LIST OF MEETING PARTICIPANTS
FOR THE MEETING ON
LOW-LEVEL RADIOACTIVE WASTE POLICY AMENDMENTS ACT
(LLRWPAA) OF 1985

Bethesda, MD
June 24-25, 1986

R.J. Augustine
Radiation SAfety Officer
National Institute of Health
Bethesda, MD 20892

Virgil R. Autry, Director
Division of Licensing and Compliance
Bureau of Radiological Health
South Carolina Department of
Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

Victor A. Bell, Chief
Office of Environmental Coordination
Rhode Island Department of Environmental
Management
9 Hayes Street
Providence, RI 02908

Thomas Blackburn
Texas Low-Level Radioactive Waste
Disposal Authority
7703 North Lamar Blvd. - Suite 300
Austin, TX 78752

Richard L. Blanton, Deputy Director
Arizona Radiation Regulatory Agency
4814 South 40th Street
Phoenix, AZ 85040

Gregory Brown
State S. Webster Engineering
1875 Eye Street, NW, Suite 550
Washington DC 20006

Holmes Brown, Consultant
Afton Associates
656 E St. NE
Washington, DC 20002

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Robert Browning, Director
Division of Waste Management
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555

JoAnne M. Buchler
American Ecology Inc.
1700 N. Moore, Suite 1925
Arlington, VA 22209

Michael E. Burns
NCI-FCRF
P.O. Box B
Frederick, MD 21701

Francis X. Cameron
Office of the General Counsel
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Elaine Carlin, Executive Director
Northwest Interstate Compact on
Low-Level Radioactive Waste Management
Washington Department of Ecology
Mail Stop PV-11
Olympia, WA 98504

Ruth Chiang Carter
Division of Waste Management
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Thomas A. Cashman
Emeritus Member CRCPD
35 St. Stephen's Lane
Scotia, NY 12302

Bradford Chase
Undersecretary of Energy
Office of Policy and Management
80 Washington Street
Hartford, CT 06106

Joseph Coleman, Director
Division of Waste Treatment Project
Office of Remedial Action and Waste
Technology
Office of Nuclear Energy
U.S. Department of Energy
Washington, DC 20545

Philip L. Collyer
ICF Technology
1850 K St, NW
Washington, DC 20006

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Lynn Connor
The NRC Calendar
P.O. Box 257
Cabin John, MD 20818

R.S. Daniels
Bechtel National, Inc.
15740 Shady Grove Rd.
Gaithersburg, MD 20815

John Davis, Director
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Lynn Deering
Geotechnical Branch
Division of Waste Management
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Terry L. Devine
Conference of Radiation Control Program
Directors, Inc.
71 Fountain Place
Frankfort, KY 40601

William P. Dornsife
Bureau of Radiation Protection
Department of Environmental Resources
Fulton Building, 16th Floor
Third and Locust Streets
Harrisburg, PA 17120

Denice Drace, Executive Director
Northeast Interstate Low-Level Radiation
Waste Commission
518 Cherry Valley Road
Princeton, NJ 08540

Kitty Dragonette
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Neil L. Drobry
ERM-Midwest Inc.
2000 W. Henderson Rd
Columbus, Ohio 42220

BEST COPY AVAILABLE

Jay Dunkleberger
New York State Energy Office
Agency Building 2
Empire State Plaza
Albany, NY 12223

Maxine Dunkleman
Low-Level Waste and Uranium Recovery Branch
Division of Waste Management
Washington, DC 20555

Charles F. Easton
American Ecology
1700 N. Moore St.
Arlington, VA 22209

Fred Feizollahi
Bechtel National Inc.
50 Beale St.
San Francisco, CA 94119

Barbara Foster
National Conference of State
Legislatures
1050 Seventeenth Street
Suite 2100
Denver, CO 80265

Floyd L. Galpin
Office of Radiation Programs
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

John M. Ganley
Doub & Muntzing Chtd.
1875 Eye St., N.W.
Washington, DC 20006

Steven Goldberg
Battelle Project
Management Division
Assistance General Counsel
550 King Avenue
Columbus, Ohio 43201

Daniel Goode
Geotechnical Branch
Division of Waste Management
U.S. Nuclear Regulatory Commission
Washington, DC 20555

BEST COPY AVAILABLE

John T. Greeves, Chief
Engineering Branch
Division of Waste Management
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Alfred W. Grella
Safeguards and Materials Programs Branch
Division of Inspection Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Richard Grill
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Robert M. Hallisey, Director
Radiation Control Program
Department of Public Health
150 Tremont Street, Seventh Floor
Boston, MA 02111

Edward Helminski
P. O. Box 9528
Washington, DC 20016

Donald C. Hoxie, Director
Division of Health Engineering
Department of Human Services
State House, Station #10
Augusta, ME 04333

Robert J. Huncan
New York State Department of
Environmental Conservation
Bureau of Energy and Radiation
50 Wolf Rd.
Albany, NY 12233-0001

Joel A. Hunt
U.S. Nuclear Regulatory Commission
Division of Engineering
Washington, DC 20555

Kenneth Jackson
Geotechnical Branch
Division of Waste Management
Washington, DC 20555

Thomas Jentz
NUS Corp.
910 Copper Rd
Gaithersburg, MD 20878

BEST COPY AVAILABLE

Alan Johnson
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA 02122

Philip S. Justus
Division of Waste Management
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

The Honorable Judy Kany
Maine Advisory Committee on
Radioactive Waste
State House - Station #120
Augusta, Maine 04333

John F. Kendig
State Agreements Program
Office of State Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555

G. Wayne Kerr, Director
Office of State Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Chris Key
Baltimore Gas and Electric
P. O. Box 1475, One Charles Center
Baltimore, MD 21203

Charles B. Killian
E.I DuPont
549 Albany Street
Boston, MA 02118

Nancy Kirner, Supervisor
Waste Management Unit
Radioactive Control Section
Department of Social and Health Services
Mail Stop LE-13
Olympia, WA 98504

Malcolm R. Knapp, Chief
Low-Level Waste and Uranium Recovery
Projects Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555

BEST COPY AVAILABLE

S.P. Kraft
Edison Electric Institute
Utility Nuclear Waste Management Group
1111 19th St. N.W.
Washington, DC 20036

Janet Lambert
Policy and Program Control Branch
Division of Waste Management
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Mindy S. Landau
State Relations Section
Office of State Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Elisabeth Langworthy
Sutherland, Asbill S. Brennan
1666 K St.
Washington, DC 20006

Rob MacDougall
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Stanley Marshall, Supervisor
Radiological Health Section
Department of Human Resources
505 East King Street
Carson City, NV 89710

Cardelia Harvey-Maupin
State Agreements Program
Office of State Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Sue L. McBride
Governor's Office of Policy Development
P. O. Box 1323
Harrisburg, PA 17120

Kevin T. A. McCarthy, Director
Radiation Control Unit
Department of Environmental Protection
State Office Building
165 Capitol Avenue
Hartford, CT 06106

BEST COPY AVAILABLE

John McGrath
U.S. Nuclear Regulatory Commission
Region I
631 Paris Ave.
King of Prussia, PA 19407

Thomas F. McKinney
Dames and Moore
1 Blue Hill Plaza
5th Floor
Pearl River, NY 10965

Gail Melson
Central-Midwest Compact Commission
for Low-Level Radioactive Waste Management
1035 Outer Park Drive
Springfield, IL 62704

Lewis Meyer
Office of Radiation Programs
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

George Mollineaux
Environmental Advisor to the Governor
Office of the Governor
State House
Concord, NH 03301

James W. Morgan, Deputy Secretary of
Legislative and Public Affairs
1600 9th Street - Room 460
Sacramento, CA 95814

Bob Nelson
Dawn Mining Co.
Box 250
Ford, WA 99013

Donald A. Nussbaumer
Assistant Director for
State Agreements Programs
Office of State Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Mary Kelleher Paris
New York Power Authority
10 Columbus Circle
New York, NY 10019

BEST COPY AVAILABLE

Jill Paukert
Southern States Energy Board
One Exchange Place
2300 Peachford Road, NE
Suite 1230
Atlanta, GA 30338

Ray Peery, Executive Director
Central Interstate Low-Level
Radioactive Waste Commission
3384 Peachtree Road, NE
Suite 260
Atlanta, GA 30326

LeRoy Person
Engineering Branch
Division of Waste Management
U.S. Nuclear Regulatory Commission
Washington, DC 20555

John Phillips
Division of Rules and Records
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Larry Pittiglio
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Richard A. Ratliff
Division of Compliance and Inspection
Bureau of Radiation Control
Department of Health
1100 West 49th Street
Austin, TX 78756-3189

John Recknagel
PSE&G Co.
80 Park Plaza Code T22A
Box 570
Newark, NJ 07101

Lovell Richie, Senior Executive
Officer for the Minnesota Pollution
Control Board
1935 West County Road, B2
Roseville, MN 55113

Steve Salomon
State Relations Section
Office of State Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555

BEST COPY AVAILABLE

Jerome Saltzman
Assistant Director for
State and Licensee Relations
Office of State Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Kathleen N. Schneider
State Agreements Program
Office of State Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Elizabeth Scott
RI DEM
9 Hayes St.
Providence, RI 02808

William A.N. Severance
E.I. DuPont
DE Nemours and Co.
L5144
Wilmington, DE 19898

Alzonia W. Shepard
Rules and Procedures Branch
Division of Rules and Records
U.S. NRC
Washington, DC 20555

Don Silverman
Newman & Holtzinger - UNWMG
1615 L St. NW
Suite 1000
Washington, DC 20036

John Starmer
Division of Waste Manager
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Peter R. Stevens
U.S. Geological Survey
410 National Center
Reston, VA 22092

Nancy Still
Policy and Program Control Branch
Division of Waste Management
U.S Nuclear Regulatory Commission
Washington, DC 20555

BEST COPY AVAILABLE

R.B. Swartzwelder
GPU Nuclear
P. O. Box 480
Middletown, PA 17057

Terry Taite
EG&G Idaho, Inc.
P. O. Box 1625
Idaho Falls, ID 83415

Gerald R. Tarrant, Commission
Vermont Department of Public Service
120 State Street
Montpelier, VT 05602

Charles F. Tedford
Arizona Radiation Regulatory Agency
4814 South 40th Street
Phoenix, AZ 85040

Diane F. Tefft
Radiological Health Program
P. O. Box 148
Concord, NH 03301

Sheldon Trubatch
Commonwealth Edison
Office of State Counsel
Box 767
Chicago, IL 60690

Jeffrey Tuttle
Low-Level Waste and Uranium Recover
Projects Branch
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Mario Villar
Florida Power and Light
P. O. Box 1400
Juno Beach, FL 33408

Kristin Westbrook
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Mark S. Whittaker
Chem Nuclear Systems, Inc.
220 Stoneridge Dr.
Columbia, SC 29210

BEST COPY AVAILABLE

Barbara Woffard
General Physics Corp.
10650 Hickory Ridge Rd.
Columbia, MD 21044

Robert H. Wolle, Executive Director
Southeast Compact Commission for
Low-Level Radioactive Waste Management
Murray Lane - P. O. Box 68
Brentwood, TN 37027

Herbert T. Wood
Department of Consumer and Regulatory Affairs
Rm. 1016, 614 H. Street, NW
Washington, DC 20001

Barbara Wren, Executive Director
Virginia Solid Waste Commission
P. O. Box 3-AG
Richmond, VA 23208

Frank Young, Section Chief
State Relations Section
Office of State Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Michael Young
Division of Waste Management
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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APPENDIX D

SURVEY REGARDING THE LICENSING OF ALTERNATIVE DISPOSAL METHODS

MEETING WITH STATE REPRESENTATIVES ON
LOW LEVEL RADIOACTIVE WASTE POLICY AMMENDMENTS ACT OF 1985
(June 24-25, 1986, Holiday Inn, Bethesda, Md.)

Your responses to the following inquiries are requested in order to help NRC conduct a discussion on the "Licensing of Alternative Disposal Methods." The forum scheduled for Wednesday morning, June 25, 1986, will address those issues and questions regarding the land disposal of low-level radioactive waste by methods other than shallow land burial. It is anticipated that responses to this survey, will direct the course of discussion, and help NRC Waste Management Staff provide useful guidance to those state representatives in attendance.

Completion of the survey and submittal is necessary by the end of meetings Tuesday, for use in Wednesday's discussion. NRC Staff will be on hand to collect your responses.

SURVEY

1. What is your title and position in the overall State or Compact Commission Radioactive Waste Disposal Program?

__State Regulatory Agency Management
__State Regulatory Agency Staff
__State Facility Siting Agency Management
__State Facility Siting Agency Staff
__Compact Commission Member/Executive Director
__Compact Commission Staff
__Other (specify)

2. What attributes and capabilities, in addition to those performance objectives set forth in 10CFR61, do you feel will be required by your respective state, compact commission or host state regulatory agency for approval of a given site and disposal technology? The Waste Management Staff is aware of several attributes that have surfaced as a result of informal discussions with various states. These are presented below and you are asked to rank them according to level of concern (1=unimportant, 5=mandatory). Space has been provided for additional attributes that you feel require consideration.

A.	Retrievability of Waste	1	2	3	4	5
B.	Early detection of radioactive release	1	2	3	4	5
C.	Ease of remediation	1	2	3	4	5
D.	Other (please list and rank)					

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3. Please rank according to state/compact level of interest (1=most interest, 2=least interest), the four concepts evaluated in Volumes 2-5 of NUREG/CR-3774 and the Mined Cavity disposal alternative.

__Aboveground Vault
__Belowground Vault
__Earth Mounded Concrete Bunker
__Shaft Disposal
__Mined Cavity Disposal

4. Are there any alternative disposal methods under serious consideration by your state/compact that do not represent a variation or combination of the four concepts evaluated in Volumes 2 through 5 of NUREG/CR-3774 or the Mined Cavity Disposal alternative? If so, please identify your appropriate state agency or compact commission for NRC follow-up.

5. What is your State or Commission position on the development of a standard facility design for possible regulatory pre-approval? If favorable, what aspects of an engineered disposal facility design do you feel are amenable to standardization?

6(A). With regard to mixed waste (waste containing both radioactive and hazardous constituents), does your respective state/compact favor dual NRC/EPA regulation or would you prefer to have one agency in control?

6(B). In your state or compact, the components of mixed waste are regulated as follows:

Radiological Hasards

__NRC
__Agreement State (please name state agency)

Chemical Hazards

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__EPA
__Authorized State (please name state agency)

Thank you for your time and effort in completing this questionaire.

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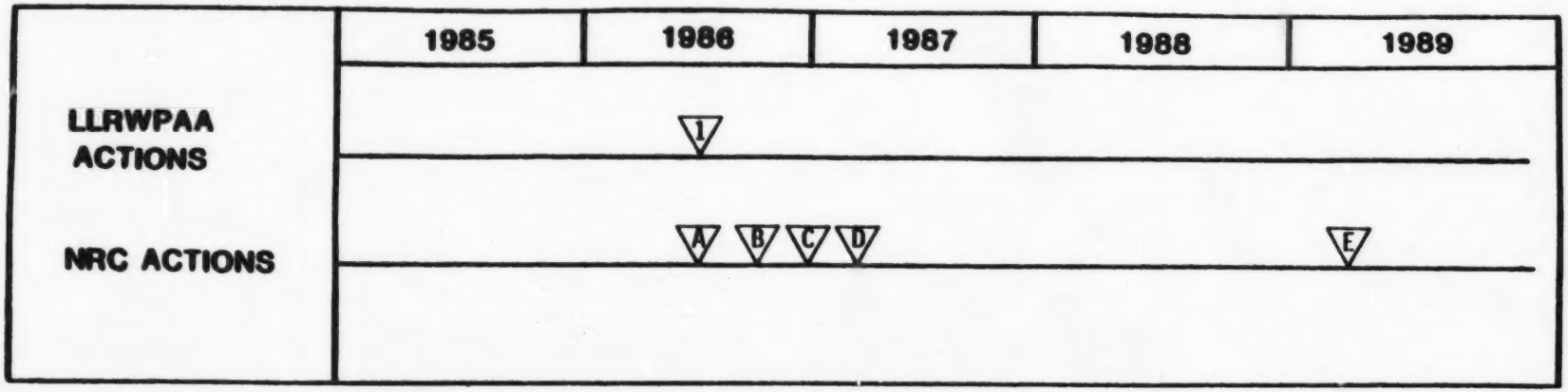
Section 10: Radioactive Waste Below Regulatory Concern



LLRWPAA MILESTONES

1. COMMISSION TO ESTABLISH STANDARDS AND PROCEDURES AND TECHNICAL CAPABILITY FOR ACTING ON PETITIONS TO EXEMPT SPECIFIC WASTE STREAMS FROM NRC REGULATION (JULY 1986)

NRC MILESTONES

- A. NRC ISSUES POLICY STATEMENT WHICH ESTABLISHES THE REQUIRED STANDARDS AND PROCEDURES. TECHNICAL CAPABILITY ALSO ESTABLISHED.
- B. END PUBLIC COMMENT PERIOD ON POLICY STATEMENT
- C. DECISION ON WHETHER TO PROCEED WITH GENERIC RULEMAKING
- D. BEGIN GENERIC RULEMAKING (IF NECESSARY)
- E. COMPLETE GENERIC RULEMAKING (IF NECESSARY)

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SECTION 10 STRATEGY

- POLICY STATEMENT INSTEAD OF GENERIC RULEMAKING
- PETITIONERS TO DEVELOP INFORMATION TO SUPPORT RULEMAKING
- EXEMPTION FROM DISPOSAL IN LICENSED FACILITY BUT ALTERNATIVE DIPSOSAL WILL BE SPECIFIED
- INDIVIDUAL LICENSEE PROPOSALS CONTINUE UNDER 10 CFR 20.302
- MATTER OF COMPATIBILITY FOR AGREEMENT STATES

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Section 10 Response

Part I

Establish standards and procedures through Commission Policy Statement and Staff Implementation Plan

- o Necessary information
- o Decision criteria
- o Administrative procedures

Part II

Establish technical capability

- o Develop review handbook
- o Confirm inhouse capability
- o Issue user guide for computer code

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BELOW REGULATORY CONCERN PETITION DECISION CRITERIA

DECISION CRITERIA

GENERAL

1. NO SIGNIFICANT ENVIRONMENTAL IMPACT
5. SIGNIFICANT SOCIETAL COST REDUCTION

DOSES

2. EXPECTED INDIVIDUAL DOSES SMALL
3. COLLECTIVE DOSES SMALL
4. INSIGNIFICANT ACCIDENT CONSEQUENCES

WASTE

6. COMPATIBLE WITH PROPOSED TREATMENT/DISPOSAL
7. USABLE ON A NATIONAL SCALE
8. CHARACTERIZED WASTE AND ACCEPTABLE VARIABILITY
9. REAL WASTE DATA
10. NEGLIGIBLE POTENTIAL FOR RECYCLE

IMPLEMENTATION

11. COMPLIANCE PROGRAMS FEASIBLE
12. NO LICENSE NEEDED FOR OFFSITE TREATMENT/DISPOSAL
13. STANDARD TREATMENT/DISPOSAL PRACTICES
14. NO REGULATORY OBSTACLES

160 160

NRC FORM 336 (2-84) NRCM 1102, 3201, 3202

U.S. NUCLEAR REGULATORY COMMISSION

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SEE INSTRUCTIONS ON THE REVERSE

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12 SUPPLEMENTARY NOTES

13 ABSTRACT (200 words or less)

The purpose of this meeting was to discuss with selected State officials NRC responsibilities under the Low-Level Radioactive Waste Policy Amendments Act, including the approach being taken and progress being made in fulfilling NRC responsibilities.

The NRC staff objective was to obtain State views on technical and institutional issues associated with NRC and State implementation of the Act and to determine any additional areas in which NRC can be of assistance in the development of disposal facilities. We believe this objective was accomplished.

The transcript of the meeting is being published at this time to make available information discussed at the meeting to those individuals and groups that have responsibilities under the LLRWPAA for developing disposal capacity and for regulating low-level waste disposal sites.

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